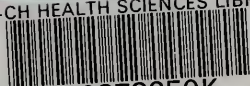


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PROCEEDINGS

OF THE

JOINT MEETING

OF THE

Virginia State Dental Association

AND

North Carolina Dental Society

HELD AT

CAROLINA HOTEL

PINEHURST, N. C.

APRIL 30, MAY 1, 2, 3, 1923

DR. H. O. LINEBERGER, Publishing Committee
RALEIGH, N. C.

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DR. W. B. RAMSEY, 1859—1924

PROCEEDINGS

MONDAY MORNING, APRIL 30TH, 1923

Dr. S. Robert Horton, Raleigh, N. C., called the joint meeting of the Virginia State Dental Association and North Carolina Dental Society to order at 10:35 a.m.

Dr. Horton, President of North Carolina Dental Society:

The Virginia and North Carolina Dental Societies will please come to order. We will ask Dr. Cheatham to deliver the Invocation.

INVOCATION

REV. THADDEUS A. CHEATHAM, PINEHURST, N. C.

Almighty God, our Heavenly Father, who givest us the desire to live, the strength to work and the courage of ideals, we thank Thee for all the good gifts with which Thou hast filled our lives, for the beautiful world with its inspiring scenes, for blessings all about our path, for love that makes life beautiful, for thoughts that uplift and gladden us. Give us a constant sense of Thy presence with us and Thy large desires for us. Give unto us a wish to serve Thee and show us how to do it best. Make us appreciative of our opportunities. Give us a deep and a clear knowledge of ourselves and a growing knowledge of our world so that we may make the noblest use of our powers. Because we believe Thou art the inspiration of every high and noble effort, we invoke Thy blessing upon this gathering. Help us to plan wisely, give us a worthy conception of the high work to which we are called. Use us to bring help and light to Thy suffering children and give us happiness in our work. Let us not measure ourselves by others, nor by any narrow or common standard of good, but let each one of us seek to give the highest quality of service. Fill us with honest purpose and prosper whatever work Thou shalt commit to us. We ask this, with Thy continued guidance of us, in the name of our blessed Saviour and Lord, Jesus Christ. AMEN.

President Horton:

Gentlemen, I would like to apologize for being a little late starting, but we cannot be responsible for trains and the train was a little late this morning and our President from Virginia, Dr. Sturgis, could not get here any earlier. We are going to try to have our meetings promptly on time throughout the sessions of the two societies. We do not want you fellows to take this as a precedent, because if you do you will be late.

We are going to start on time and stop on time as much as possible. We will now have the address of welcome of Dr. John H. Wheeler, Greensboro, N. C.

ADDRESS OF WELCOME

DR. JOHN H. WHEELER, GREENSBORO, N. C.

Mr. President, Members of the Virginia Dental Society, visiting Friends, Ladies and Gentlemen:

I consider it quite an honor to have the privilege of welcoming you friends to North Carolina. I consider it quite an honor to stand before a body of men such as the men from Virginia. Of course, we know something of your professional history, the work you have been doing, and the ambitions which are actuating you. We know something of the results you are getting and so I say I consider it no small honor to be privileged to give you the welcome to North Carolina. There are some words in the English language which are overworked, some words we feel we could be happy if they were not used, because of their limitation, but there is one word which has no limitation, and is always new so long as men have ambition and the desire for something which is better than they possess. so long as men are going forward from good to better, from better to best, just so long will the word "progress" remain ever new. Just so long as the pot of gold is still at the end of the rainbow, just so long as Utopia is still a dream, just so long will the word "progress" be dominating our lives, for we are really very sincere, honest men, and we will be going forward from good things to better things, ever striving for the best and not realizing to that which is the limit. It is in this spirit of progress that we greet you in North Carolina. We are not unmindful of the wonderful history of our sister state. No man who loves the names of Lee and Jackson, but loves the name of Virginia. We feel that we are brothers in more causes than one. Wherever sons of Virginia have been called upon to shed their blood the sons of North Carolina have stood shoulder to shoulder with them, whether fighting Indians in early days, or releasing ourselves from British tyranny, whether defending homeland in civil strife, crossing the seas to make the world safe for democracy, no matter what, Virginia and North Carolina have always stood shoulder to shoulder and we feel that we are truly brothers. Sometimes you know brothers fall out, as brothers will, and have little brotherly squabbles, but in spite of discrimination of freight rates that you gentlemen have exercised against us we love you still. Virginia has the right to be called the Mother of Presidents, when we think of Virginia we think of Washington, Jefferson, Madison, Tyler, Taylor, and of Wilson and—of *Sturgis*. Virginia is a commonwealth whose history is glorious; from the early days of settlers at Jamestown up to the present time

the sons of Virginia have had the ambition and have gone forward day by day, week by week, and year by year. Virginia is known so far as the country extends, from the Atlantic to the Pacific. Why, last summer Dr. Fleming and I found the new crop of Virginia peanuts advertised in Los Angeles, California! So it is in the spirit of brotherliness we welcome you. In the spirit of Abou Ben Adhem:

“Abou Ben Adhem (may his tribe increase)
 Awoke one night from a deep dream of peace,
 And saw—within the moonlight in his room,
 Making it rich and like a lily in bloom—
 An angel, writing in a book of gold.
 Exceeding peace had made Ben Adhem bold,
 And to the presence in the room he said,
 ‘What writest thou?’ The vision raised its head,
 And, with a look made of all sweet accord,
 Answered, ‘The names of those who love the Lord.’
 ‘And is mine one?’ said Abou. ‘Nay, not so,’
 Replied the angel. Abou spoke more low,
 But cheerily still, and said, ‘I pray thee, then,
 Write me as one that loves his fellow men.’

“The angel wrote and vanished. The next night
 It came again with a great wakening light,
 And showed the names whom love of God had blessed,
 And lo! Ben Adhem’s name led all the rest.”

We are working hand in hand for the cause for which we have dedicated our lives, this spirit of brotherhood will send us on to heights that never yet have been attained. We welcome you to Pinehurst, the sand hills, the ozone, which is distilled by the pine trees, to the golf courses, to the trap shooting that Gene Howle has prepared for you. (He told you about it in a letter he sent you.) North Carolina welcomes you to her \$65,000,000 good roads program. We know that *you* will enjoy them. Gentlemen, we welcome you, thrice welcome you to a conference of the things that mean so much to us, to an intensive study of the problems before us, confronting us from day to day, to the things that mean so much to human health and human happiness. Dentistry has undergone some wonderful changes since your honorable President and I were students at B. C. D. S. Dentistry since then has gone forward, dentistry has been progressive, dentistry is still progressing. We have gone out of the realm of purely mechanical to the realm of pathological and we are now dealing with the vital health of the people of the country and I make bold to say that there is no branch of medicine that tends more to the conservation of public health than intelligent dentistry. You cannot do a thing in the human mouth, gentlemen, that you are not dealing with the pathology of the human body. If it is as simple a thing as inserting

an amalgam filling you can overheat by the use of a bur or stone, and produce a pathological condition in the pulp of the tooth that will react over the whole system. You can put in an ill-fitting plate, you can put in an improperly constructed bridge and whenever you do these things you are dealing with tissues of the body that are going to react somewhere and may eventually result in the death of that patient. I heard Dr. Tom Hinman say "I have killed my man, have you killed yours?" That is a serious charge to bring, but it is true. Until we realize that we are not merely doing a mechanical thing, but dealing with the living human tissue, we shall never attain to the status that we should attain as truly professional men. Dentistry is going forward by leaps and bounds. I was never as proud of the fact that I am a dentist as I am today. I remarked recently to a friend that I wished I was a youngster just coming out of college that I might have the privilege of participating in its still further advances. We invite you to work with us and help solve these problems, that we may go on and on and on until it reaches the height it is destined to reach and do for the people what it is destined to do. I believe it is good for us to be here, I believe we shall accomplish great things. I believe by the combination and coalition of the thought and acts of these men that we shall all leave Pinehurst better equipped to handle the problems that confront us from day to day. Gentlemen, we welcome you and hope that your stay will be pleasant and profitable and that we will carry away a knowledge that will make us better dentists than we have been before. (Applause.)

Dr. Sturgis, Warrenton, Va.:

Dr. John P. Stiff, of Fredericksburg, Va., will respond to this cordial address of welcome.

RESPONSE TO ADDRESS OF WELCOME

DR. JOHN P. STIFF, FREDERICKSBURG, VA.

Mr. President, Members of the State Dental Society of North Carolina, Virginia State Dental Association, Ladies and Gentlemen:

In attempting to voice the spirit of this occasion I pause in silence. I have not adequate words to respond to the generous address of welcome delivered by the cordial representative of the Dental Society of the State of North Carolina as he bids the Virginia State Dental Association to this fair and beautiful spot within the confines of this old commonwealth.

His address is so full of genuine fellow feeling and whole heartedness that it makes us glad we are here. In responding to Dr. Wheeler I am reminded, however, of what a friend of mine once told me. It was an occasion similar to this. I was called upon for

an address. I started off with full steam, under high pressure and kept it up for an hour and a half. Of course, the address was a gem. Unparalleled in oratory, holding my audience in rapt attention—without a single applause. At the conclusion of the great effort this friend of mine approached me in most solemn manner and said: "Do you know the three essentials to a great speaker?" Of course I thought I did, but to give him a chance, I replied, "Perhaps I do not, what are they?" You may imagine how I felt when he said, "They are these:

"1st. He must stand up straight.

"2d. Speak out loudly, and

"3d. Sit down quickly."

I have learned my lesson and I assure you I will adhere to the last requisite without deviation.

In the spacious harbor of New York there stands a stately, grand and beautiful statue, the wonderful statue of Liberty. It faces the ocean, with a garland upon her brow, a torch in hand, and a pleasing countenance bids a hearty welcome to the good people of every nation and clime, offering them an abiding place upon the soil of happy and peaceful America, the Land of the Free and Home of the Brave. I see more than that before me today. We have listened to the charming address from the representative of the State Dental Society of North Carolina. A real live man, with smiling face and open arms he welcomes this happy assembly. He has plucked from his brow the garland with which he was adorned, bedecked as it is with the buds and blossoms of this fair State, and gently has he placed the same upon our foreheads. We have dangling at our belt the very keys which unlock your hearts, which also so rightly fit the storehouses of your hospitality and from which has already come bursting forth the sweet perfume of loyal affection and genuine fraternity which, like Mary's alabaster box of precious ointment, has filled the place round about.

At our meeting in the city of Richmond last October we voted without a dissenting to join you in this annual meeting. And thus I am reminded of a quotation from the pen of that matchless writer, William Shakespeare:

"There is a tide in the affairs of men
Which taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat,
And we must take the current when it serves
Or lose our ventures."

And so on the high tide of your kind invitation we have just floated into your presence. Those who could not answer the call and come, I know are filled with "shallows and miseries." But WE have taken the current when it served and I know we will not lose our ventures.

Our gallant and beloved commander-in-chief of the Expeditionary Forces, General Pershing, as he placed his foot on the soil of fair France, with Old Glory fluttering in the breeze, with a halo of victory about his head and on every side the boys in khaki, thicker than the rain drops of heaven, uttered these words, which will never, never be forgotten: "LaFayette, we are here." Today, my dear friends, we have simply slipped over the invisible line which separates these two sister states and placed our feet upon your fair soil. Perish the thought that we are here to worship the shades of departed heroes, for great indeed they are and greatly to be praised. We are here on this auspicious occasion to mingle with the sons of those noble sires. We are here to rejoice in the achievements of a lively and forward looking society, whose ideals are noble, whose aspirations for achievement and advancement are as limitless as the sky above us. For you as loyal sojourners, we express the wish at this moment that the year 1923 may be the brightest jewel in the necklace of the years.

We are here to fight the Staphylococcus and Streptococcus, or any other bug who disturbs our fraternal tranquility. We promise to offer ourselves to solve any problem dating from the burial of King Tut to the year of our Lord 1923. And so we join with you to unhorse every foe to the progress of our worthy profession, whether he be native or alien, whether in the making or in the full charm of his antagonism. And thus with our armor on, with staff in hand and a full charge of loyalty and comradeship, we fling the flag of old Virginia to the breeze and say "North Carolina, we are here."

Dr. B. F. Hall, Vice-President North Carolina Dental Society, assumed the chair.

Dr. B. F. Hall:

Dr. S. Robert Horton, President North Carolina Dental Society, will now deliver his annual address. I will appoint as Committee on President's Address: Drs. R. M. Squires, Wake Forest; H. L. Keith, Wilmington; C. C. Keiger, Charlotte; F. L. Hunt, Asheville; John H. Wheeler, Greensboro.

PRESIDENT'S ADDRESS

Ladies and Gentlemen of North Carolina Dental Society and Virginia Dental Association, assembled:

It will not be in the scope of this short paper to recount to you, step by step, the growth of North Carolina Dental Society, however interesting that might be to you, nor will I try to tell you of the many things your officers have tried hard to bring to pass this

year, but having worked with the most able and willing workers any man could ask for, I have been lifted by their enthusiasm to the mountain peak and have been enabled to catch a vision of the future, and will make this address an appeal to you to join me in making our Society the greatest society and dentistry the best profession. I will say in behalf of the secretary who now occupies that chair, that there has been no slackening in his efforts, that he has been indefatigable in his efforts for the benefit of this Association. (Applause.)

In my recommendations to you, gentlemen, I want to ask that a committee be appointed that shall accept or reject every recommendation separately, and I wish to respectfully ask that the house of delegates put the machinery in motion at the first meeting to make any recommendations that may be accepted, effective for immediate service to the Society.

We realize as we look over the past years that your officers have worked and toiled and brought their best thoughts and efforts to the Society to have the Convention say, the President's address was very much enjoyed and his efforts have gone "where the whangdoodle mourneth."

Some of the things I suggest will seem hard but do not reject them until you have given them thought for they are not given to you without thought.

The man who once most wisely said, "Be sure you are right and then go ahead," might well have added this, to wit, "Be sure you are wrong before you quit."

Recommendation No. 1. Stop the useless expenditure of four or five hundred dollars per year to get out our minutes and get some of our dental magazines to bind our proceedings, and we can then keep them in the State Library, where they will be kept and guarded for all time.

There are only a few men in the State that keep the yearly proceedings and if for any reason their libraries should be sold to one not so much interested in the history of our Society, they will be lost.

In my vision from the mountain top, I see in the coming years the activities of North Carolina Dental Society becoming so numerous they cannot possibly be handled by a secretary that has to make his own livelihood.

So, gentlemen, I would offer as *Recommendation No. 2:* (a) That we start here and now to perfecting machinery for maintaining an all-time secretary or librarian whose business it will be to do the clerical work for secretary elected yearly, and attend to all literature belonging to Society.

(b) That a fee list and delinquent list be prepared (by a committee to be appointed), kept up-to-date and sent to all members in good standing by the aforesaid librarian. The delinquent list to be appended quarterly and revised once in two years.

The money saved on getting out minutes would pay nearly half the expenses of maintaining this office.

If this Society would reach the heights you forward thinking men desire, it must not depend upon men to do this work that the secretary must do, who is compelled to make his own livelihood. Whenever a secretary finds it a loss of too much time he can slacken his pace and the Society is the sufferer.

The fee list will be a minimum list that will cover the needs of every one and work no hardship.

Day by day, we all can say

We grow richer in knowledge, but not in pay.

We can catch many of the peripetetic vagabonds (my respect for my audience forbids me saying in words suited to them what I think of a professional dead beat).

(c) That this committee work out plans for carrying our own liability insurance from this office, under a board of governors elected by the Society.

Recommendation No. 3.

To change time of meeting from summer to winter or early spring so that state meetings can be held in every town in the State that can accommodate it, accommodating time to place of meeting.

Recommendation No. 4.

That a committee be appointed known as The Hospital Committee to send out questionnaire to all hospitals of the State to ascertain status of dentistry in the several hospitals and to encourage all private hospitals to appoint a dentist on their staff, and to see that all dental work done in state and philanthropic hospitals be under the supervision of the State Board of Health, a dentist in charge.

Recommendation No. 5.

That space be left on program for exhibitors and require the exhibits to be closed whenever the Society is in session.

The exhibitors do more to make or mar a dental society meeting than any other one factor and if we can give them the coöperation that they deserve we will have their loyal and hearty support.

Recommendation No. 6.

That a committee of ladies be appointed each year that will make it their business and pleasure to see that all the ladies visiting our meetings shall be properly entertained and their visit made enjoyable.

Recommendation No. 7.

In view of the fact that we are using more morphine, heroin and cocaine than all the rest of the world and not knowing when

we are feeding poor unfortunates poison to their own damnation that the dentists of North Carolina be requested to forego the use of all narcotics in their offices and use the American made non-toxic products known as procaine, etc.

Recommendation No. 8.

That a committee be appointed to work in conjunction with one from our sister state, Virginia (if they see fit to appoint such a committee) to work out plans for a mid-winter clinic to be held in Richmond, Va., yearly. This not in opposition to Atlanta, but to take care of the many dentists that they cannot accommodate.

Recommendation No. 9.

That a loving cup be offered to the district society producing the best clinic at our annual meeting. This will stimulate study clubs in districts and towns that will increase the efficiency of dentists 100 per cent. I am looking forward to the time when the study club idea will be fostered by the American Dental Society. We have but little to offer to the men outside our Society and that is why we do not get them and are continually losing some of those already members.

Recommendation No. 10.

That we have our meetings so arranged that a man coming to our conventions will get a post graduate course in subject selected by him instead of the plan now used of rehashing many of the old subjects and merely giving a smattering idea of the new.

When we sit down after reaching our offices and try to think what we have learned at our Convention the same question arises in our minds as in our stomachs after eating a Greek brunswick stew—what the devil have we taken in?

The plan I would have worked out under this recommendation is: that we secure the best clinicians obtainable and let them lecture and clinic to their classes the first day, have the classes do the work the second day, and the third day go over the work showing them their mistakes.

Will you not visualize what five years of that kind of work will do for dentists and the public at large? I tell you men, we can make more progress in five years than has ever been made in dentistry in any fifteen years of its existence.

The world is awake to the necessity of dentistry, fellow practitioners, and the big question is, are we ready and capable of meeting their demands?

We have been traveling across the valley of disappointments with a heavy pack of expenses and muddled ideas; our feet miring in the mud of ignorance and deceit, our shoes clogged with a heavy accumulation of a multiplicity of non-coördinating ideas and no standardized path to follow until we have reached the foot of the mountain.

The noble workers who have gone before—God bless their memory—have blazed little trails far up this mountain of pure professional ideals and efforts, but most of the trails are hidden because they are grown up from disuse, but their lights are still shining and they are closer together than ever before; thereby making it more easily seen by those of us below. Men and women—you who have taken dentistry as your life's work—do you not see if we raise the flag with its emblazoned sign *Excelsior* above our heads and work and march shoulder to shoulder we can make a broad, well traveled trail up this steep sided mountain, so that those who follow may work and build without confusion?

Dr. C. B. Gifford, Vice-President, Virginia State Dental Association, Norfolk, Va., assumed the chair.

Dr. C. B. Gifford:

Ladies and Gentlemen, we will now have the address of the President of the Virginia State Dental Association, Dr. W. M. Sturgis, Warrenton, Va. Before he reads the address I will appoint as a Committee on the President's Address (Va.): Drs. H. W. Campbell, Suffolk, Va.; John Bell Williams, Richmond, Va.; J. E. Johns, Roanoke.

Dr. Sturgis then delivered the annual address of the President of Virginia State Dental Association.

(Dr. Horton in the chair.)

ADDRESS OF THE PRESIDENT OF THE VIRGINIA STATE DENTAL ASSOCIATION

DR. W. W. STURGIS, *President Virginia Dental Association*

Mr. President, Members of the North Carolina Dental Society and the Virginia Dental Association, Ladies and Gentlemen:

I want to congratulate the members of the Virginia Dental Association for having the privilege of meeting here with the North Carolina Society, and I take this opportunity to personally, and in behalf of the Virginia Association, to offer sincere thanks for the invitation which makes it possible. I predict that it will be followed by other joint meetings, which will prove of lasting benefit to the profession of both states.

Nothing so broadens and elevates as contact with people of other sections than one's own.

Many of us have not before visited this beautiful place, of which we have heard so much. We shall not only have the chance to see the beauties of the old North State landscapes, but we have the

opportunity of coming in contact, in a most intimate way, with its dental profession as an organized body.

At our meetings in past years, we have had the pleasure, and honor, of having with us some of the North Carolina men. It is my earnest hope that in the future there will be much visiting between the members of the two associations, whether it be to attend joint meetings or not.

Only about seven months have elapsed since our last meeting, giving much less time than usual to prepare for this one.

There is nothing out of the ordinary for me to report—no legislative fights, as we had during the previous two years, and the Legislative Committee is enjoying a well earned rest after a period of unusual activity.

I want to thank the officers and committees for their hearty coöperation and most efficient work which the program and the reports which will be presented will attest.

Succeeding, as I did, a presiding officer and a leader so abundantly qualified for the position has caused me to feel my many deficiencies all the more keenly, but having a most efficient corps of helpers has given me courage and hope.

As I glance back over the years of my professional life, I can but marvel at the great progress that dentistry has made, then I look to the future with prophetic eyes and see even greater things which are to come. As we contemplate this marvelous expansion of our specialty in the past and that looked for in the future, we must realize the importance of being up and doing, to fit ourselves for the great responsibilities which devolve upon us. It calls for serious study and application. We must take ourselves more seriously, we must impress the people with the importance of our work and of ourselves. We can only attain to that confidence by deserving it and we can deserve it only by a knowledge of our subjects, and proper character and ambition to back that knowledge.

We are no longer mechanics but are scientists in a broader sense. Those of us who have practiced any length of time know that, despite our increased knowledge and application, dental and general ills are on the increase. We must continue to seek earnestly for means of prevention of disease—our highest ambition should be to prevent rather than try to cure after disease is acquired. I think this fact makes it plain that we should not only observe closely ourselves, but we must study the findings of investigators and apply them. I personally think that the prevention of a great many ills, dental and general, will be brought about by the correction of our haphazard diet. The investigations of McCullum, McCann, Hartzell, Wylie, Mayo, Howe and many others seem to point, without doubt, to the above conclusion. The articles of Dr. Howe are most startling and interesting, and demand the close attention of all who would serve humanity.

I am very glad, indeed, to have upon our program some general practitioners of medicine, as has been the custom for some years. Nothing has been more clearly proven by the findings of the past few years than the absolute necessity of the close affiliation of the two classes of practitioners. I hope to see the day when the membership of both Medical and Dental Societies will be made up of both medical and dental men and on the same footing. Is it too much to wish for the day when the practitioners of our specialty everywhere will be required to have a medical as well as a dental degree?

I wish I could impress upon all dentists the almost absolute necessity of becoming members of the State Association. I take it that every one seriously interested in practicing dentistry has the ambition to serve his people and himself in the best way possible. I feel sure he can do neither without frequent and intimate contact with those having the same aspirations and interests.

They should not only become members, but attend its meetings and take an active part in the discussions of the subjects presented. It is a self-evident fact that one's interest in any organization, or cause, is in proportion to the active part he takes in it.

Let it be our ambition to get into our Association every worthy man in the state.

In this connection, let me bring to the attention of the membership the importance of prompt payment of dues. If you would preserve the continuity of your membership in the American Dental Association and obtain in unbroken sequence *The Journal*, it is absolutely necessary that your name with dues be sent in early each year. By attending to this promptly upon receipt of bill from Treasurer, much annoyance will be avoided by all concerned.

At our last meeting, Dr. M. B. Rudd kindly consented to take up the work of Study Club Director—I believe you will agree with me that it was a wise selection. Dr. Rudd, at considerable sacrifice, has visited Norfolk and Roanoke, and, besides doing what he could to establish clubs, has given a most interesting clinic on denture construction. Those of you who had the good fortune to see his clinic will, no doubt, say it is one of the very best you have ever seen. I hope the study clubs will be established all over the state, and when subjects, other than mechanical, are being considered, the physicians should take part in them, thereby fostering a closer coöperation, and prove a benefit to all concerned.

Dr. Rudd suggests—and I heartily agree with him—that the larger clubs, at least, have a committee to prepare papers and clinics upon the subjects they have been studying, for presentation to the Virginia State Dental Association during its annual meetings. It seems to me to be a most excellent idea, it gives an opportunity for discussion by the larger body, and should encourage the clubs to greater activity.

I should like to urge upon the membership the importance of affiliating with the study clubs. The following clubs are in active operation: The Virginia Prosthetic Association, The Tidewater Study Club and the Piedmont Club. It is our duty to give these clubs our hearty support.

Education should be the very corner-stone of our profession, and by education I don't mean it in the narrow sense of purely dental subjects, though I take it to be a fact that dental education in its fullest cannot be acquired except on a basis of a broad general one.

In view of this fact, and knowing this Association is well able to assume such an obligation, it seems to me we can do nothing of greater merit, and for which we will receive more praise, than to offer help to some one of those ambitious youths of our state, who are desirous of an education but without sufficient means for college attendance.

I, therefore, recommend that this Association establish a scholarship at the College of William and Mary of the value of one hundred dollars (\$100.00)—the same to be known as "The Virginia State Dental Association Scholarship." The selection of the beneficiary to be left to the faculty of the college. I hope this matter will be fully discussed in all its phases and that it will be your pleasure to adopt it.

In view of the fact that the subject of nutrition has been so forcibly brought to our attention in recent years by numerous investigators, I recommend that this Association establish among its regular committees, and made up on the same plan as the one on Mouth Hygiene, a committee the work of which shall be to put before the profession and public such knowledge as we have, and can acquire, on the subject of the science of eating. I think when we have acquired this knowledge and apply it we shall have taken a long step forward in the prevention of disease.

I believe the American, and some other dental organizations throughout the country, have committees which have for their object the securing of some practical, universal, licensing law. If it can be equitably worked out, I have no doubt it would prove of vast benefit to our profession. I believe it would be wise for this Association to study this matter and take such steps as seem best.

I further recommend that this Association publish and distribute two Bulletins each year, made up after the plan of those sent out by The Medical Society of Virginia. This will entail extra expense and a great deal of work, upon the part of the secretary and others, but I think the importance of our work demands it.

In view of the vast amount of work which the Secretary-Treasurer has to do, I feel that there should be a substantial increase in the pay which has heretofore been given him. Few have a chance to know the great amount of time and painstaking observ-

ance to detail that is necessary to perform well the duties of the office of Secretary. I trust it will be the pleasure of this Association to grant the increase.

I should like to call attention to the large display of the exhibitors. I deem them one of the very important aspects of our meetings. Careful examination of their wares will prove of mutual benefit. I thank them for their presence.

In conclusion, I wish to thank all officers, committees and others who have so earnestly helped by word or deed to make this meeting a success. I have not words to express my gratitude for their unflinching help and encouragement.

I think I am not being ungrateful for the work of the others when I select for special thanks Dr. Bear, who, as Secretary and Treasurer and also Chairman of Program, Publicity and Clinic Committee, has rendered the Association and me such marked service.

I want, further, to thank this Association for the many honors it has conferred upon me. For fifteen years, I have been an official, and though I have served but poorly, my shortcomings have been looked upon in a most friendly and generous way. I shall always look back with pleasure and thanks to the delightful experiences and associations of these meetings. My membership in this Association, covering a period of twenty-five years, has brought me nothing but pleasure and profit. I trust it shall be my privilege to attend its meetings and associate with its members for another twenty-five years.

Again, I thank you.

Dr. Horton:

You fellows better not laugh, I have something. You will all agree with me that it is a great pleasure to have Dr. Otto U. King, of Chicago, here with us today to make an address. Dr. King has been Secretary of the National (American now) for ten years and all of you who have had secretarial experience can appreciate something about what Dr. King has been through with and I don't believe there is a work in a society that acquaints a man with all of the phases and all of the necessities like the secretarial job. We want to hear now Dr. Otto U. King, of Chicago.

Dr. Otto U. King, Chicago:

In the first place, I want to bring to you greetings of The American Dental Association. At the present time we have 34,000 members. That is quite a large number.

(Dr. King then proceeded to deliver his address entitled, "The American Dental Association.")

(Address was not taken.)

Dr. W. M. Sturgis, President, Virginia State Dental Association:

We have with us another representative of The American Dental Association, we are highly honored in having with us Dr. Giffen, President-Elect of The American Dental Association, whom I wish to introduce.

Dr. William A. Giffen, Detroit, Michigan, President-Elect of the American Dental Association:

Mr. Officials, Ladies and Gentlemen: Next year I hope to be able to start out when called upon ahead of Dr. King. I think I will have a better opportunity. It looks as though you had everything you ought to have this morning in the way of information and good fellowship. I am mighty glad to have this opportunity of saying helloa to you folks of the South. I didn't suppose it would be possible to meet so many dentists and meet so many strangers among them. I am glad to be here and glad to do anything I can in my power to help make the meeting a success. Gentlemen, I thank you.

Dr. Eugene B. Howle, Raleigh, presented an announcement, as Chairman of the Entertainment Committee, to the effect that there would be trap shooting at 1:45 p.m., golf, horse racing on Wednesday at 2:45, three running races, three harness races, and special stunts, and asked for volunteer riders for these stunts.

Adjourned at 12:25 p.m.

MONDAY AFTERNOON, APRIL 30TH, 1923

Dr. Horton called the meeting to order at 2:25 p.m.

Dr. Horton:

Gentlemen, we will now have the pleasure of hearing a paper by Dr. L. P. Anthony, of Philadelphia.

Dr. L. Pierce Anthony, Philadelphia:

First, I want to thank you very heartily for the honor you have conferred upon me and the implied compliment you pay me in inviting me to read a paper. I have several years wanted to get down among the Southern States. As some of you probably know—or if you don't, you will probably find out before I am through—I am a Southerner myself. I am proud of it and more proud of it each year when I do get South. When Dr. Bear asked me to read a short paper I accepted and interpreted his request literally and I have acted accordingly. I have written you a short paper, one that will take not a great many minutes to read.

THE PRESENT STATUS OF THE PULPLESS TOOTH

BY L. PIERCE ANTHONY, D.D.S., PHILADELPHIA, PA.

The startling revelations resulting from a sober consideration of Hunter's denunciation of crown and bridge work as being the cause of many serious ills of the human body stimulated a retrospective investigation of the methods and procedures upon which crown and bridge work is premised. The result of this investigation soon forced a realization of the fact that the pulpless tooth, up to that time almost entirely relied upon as the foundation upon which crown and bridge work rested, even though uneasily, was the principal guilty factor and that our methods of dealing with the pulpless tooth would have to undergo radical revision if we hoped to successfully continue this particular phase of dental practice.

The decade from 1910 to 1920 brought forth volumes of incriminations against the pulpless tooth from both the dental and the medical professions in which almost every disease to which humanity is heir was charged to focal infection having its origin in the much maligned pulpless tooth. The craze for extraction then became so rampant in both professions, it was feared that unchecked it would soon lead to a toothless nation. It now, however, seems destined to take its place among the numerous fads that have swept over the professions.

Time and experience have enabled a closer observation of a greater number of systemic diseases which had been attributed to the pulpless tooth and had been treated on the basis of eradication of the suspected cause, with the result that the benefit to the systemic condition from the removal of the teeth was transitory and in many instances nil and left the patient, as Dr. Deaver, the noted Philadelphia surgeon expressed it, *sans* teeth, but not *sans* troubles. These findings compelled a halt on the part of the medical

profession in their etiological search for the solution of many of their unsolved problems and forced the realization upon the medical man as well as the dentist of the fact that there were other sources of infection than the pulpless tooth.

If, however, no other beneficial result had come from the confusion caused by focusing the attention of the two professions upon this important problem, the benefits already gained by both from a closer affiliation between medicine and dentistry, we feel justified the trying period of doubt and uncertainty through which now appears the dawn of a clearer conception of the inter-relationship between these two branches of the great healing art.

Several things may be said in extenuation of the position of the medical man. For years the dental profession had been endeavoring to impress upon him the desirability of proper allocation of oral conditions as related to the bodily health. In the absence of a proper scientific term to designate the pulpless tooth, the dentist had unwittingly fallen into the habit of calling it a "dead" tooth both to the laity and to members of the medical profession. The medical man accepted the designation "dead tooth" literally and in the light of present day surgical teachings there is only one method of dealing with dead tissue in the body, namely, thorough and complete removal; he therefore reasoned and acted accordingly, and logically from his viewpoint.

There are those in the dental profession who still believe and declare that a pulpless tooth is a dead tooth, but the great majority have learned from clinical experience that a pulpless tooth is not dead in the sense of being without source of vital maintenance. That is another of our problems that will have to be definitely settled scientifically as it is already settled clinically before we can justify in the mind of the surgeon the retention of a pulpless tooth in the mouth.

The result of Hunter's stigma upon septic dentistry was to arouse in the profession the desire to more adequately fulfill its mission to humanity and to correct what all agree to be the greatest fault of dentistry. The minds of the clinicians and researchers were concentrated upon the problem of the pulpless tooth with the result that procedures have been devised or rather perfected whereby we are reasonably sure of relieving the pulpless tooth of the stigma of being a potential menace to the individual. Today we have definite scientific procedures which if assiduously pursued will save any salvable tooth. This may appear self-evident upon its face but the distinction must definitely be made between teeth that should and those that should not be saved.

In the past the dentist has conceived his mission to be that of saving the teeth of his patients for their value as masticatory organs and a useful factor in the process of digestion. We believe this to be the prime mission of dentistry, but we feel that

imbued with this conception of his mission and swayed by sentimental consideration of his patient's welfare, he has too frequently endeavored to save teeth that were hopelessly involved, with the inevitable result of failure and serious health cost to his patient.

The most salutary lesson the dental profession can learn from the failures in pulp canal treatment in the past is the necessity of adopting the attitude and practice of the general surgeon in the intelligent selection of pulpless teeth for operative procedure with a hopeful, not to say, assured chance of success.

What dentist among you has not many, many times undertaken the treatment of chronically infected teeth that he had not the slightest hope of curing simply because the patient wanted to save the tooth? And what surgeon would undertake a serious operation with less than an even chance for success, indeed almost 99 chances to one, in his favor?

I am aware of the fact that I subject myself to the criticism of this being an unfair comparison, but it requires little latitude to place the infected tooth in the class of a major operation if we are to believe all that has been charged to it.

Do not understand me as believing that all pulpless teeth can be saved. I believe that many and serious systemic diseases have their origin in septic oral conditions having their focus in an infected tooth root; I believe that many pulpless teeth should be removed; but I also believe that by proper surgical treatment by methods that are now tried and proved many pulpless teeth can be and are being saved without in the least endangering the health of the patient.

Grieves in a comprehensive study of this operation from an extensive clinical as well as laboratory experience presents what we believe to be the most logical and sound classification of teeth in which the pulps have become diseased with a view to determining those conditions which can be treated and indicating those in which it is useless to endeavor to save teeth by treatment and filling.

You are all doubtless familiar with the extensive and very valuable work Grieves has done in studying apical infections, and it is only desirable at this time to sum up his conclusions as the result of his work.

He is in practical agreement with all those who have seriously studied the question of pulpless teeth in their relation to systemic diseases and summarizes his beliefs as follows: "The vital apex is the crux of all canal operations. Its maintenance is worth any amount of time and effort. It cannot be encapsulated because periodontal fibers are everywhere attached to it. There is no denudation or hypoplasia in which encapsulations may lie unless they traumatically protrude into the membrane. Quite the reverse;

the denuded apex, necrotic by whatever means, is not worth a moment's effort, no matter how medicated or how well filled."

Over-medication is an endeavor to save teeth and in treatment before filling we believe is responsible for countless apical areas that became a menace to health, and Grieves says in this regard that invasion of the tissues by chemical agents is even more to be feared than bacterial invasion, for the reason that the bodily resistance is better prepared to combat infection than chemical necrosis.

Supplementing Grieves' classification the factors to be considered in arriving at the decision to treat or extract a tooth in which the pulp is nonvital or from which the pulp has been removed are in the main as follows: History of the tooth; Radiographic findings; accessibility of the root canals; general health and resistance of the patient; presence of metastatic infection and its relation, if any, to the tooth condition. A desirable addition to the above when practicable, is a blood test and chemical analysis of the blood. Di Niord has devised a method of chemical analysis of the blood which determines the presence or absence of metastatic infection. A method that should be helpful to the dentist in absolving the pulpless tooth from many of the sins charged against it by the medical profession.

Grove in a paper dealing with nature's method of caring for apical conditions after removal of the pulp says, "our present technique of pulp removal has failed to prevent periapical infection because the apical tissue has not been preserved and not because we failed to make perfect root fillings." Grove has done extensive research work in this field and believes that in many instances cementum is formed to close the foramen, but only where the apical tissues are in healthy condition, because the cementoblasts cannot function in the presence of infection or where dead cementum or dentin is present. The speaker is the happy possessor of a central incisor root in which the apex gives every indication under the radiograph of being thus sealed with cementum.

The hysterical uncertainty into which the dental profession was thrown by the revelation of the numerous systemic diseases that may arise from infections about the roots of teeth resulted in many radical views regarding the question, the most harmful of which we believe is that no pulpless tooth should remain in any mouth because of its potentiality for evil, and thus has arisen the "hundred percenter." The principal basis for this radical view found its justification in the promulgation of the thought and in some instances apparent proof that all pulpless teeth, no matter how well and under what conditions they were filled, become infected within a few months. Dr. U. G. Rickert, of the University of Michigan, in a paper before the New York State Society, reporting an extensive series of experiments on sterilization of root canals, was so confident of his findings in this respect that he answered the ques-

tion we believe very positively, when he brands such statements as "the most vicious falsehoods recently published in the name of science." Rickert has proved beyond doubt that root canals of infected teeth can be rendered aseptic and so maintained for as long as twenty years. He is so positive of his findings and so optimistic with regard to pulpless teeth that he expresses the fear that in the near future the danger will be that too many pulpless teeth will be retained rather than as now—too many removed.

I have always maintained a conservative attitude toward the reckless sacrifice of teeth merely on the suspicion that they may at some time become a menace, but I do not interpret the present day sentiment to be so overwhelmingly in favor of the retention of pulpless teeth. Incidentally, it may be remarked in passing that Rickert failed, as have numerous other expert bacteriologists, to confirm Rosenow's work on the selective affinity theory of bacteria, which is the principal justification of the widespread fear of innumerable systemic conditions resulting from foci of infection in the mouth.

Our conception of the solution of the problem is in root canal work that is premised on sound diagnosis of the apical areas and executed conscientiously on surgical principles, such as many operators are now pursuing with every assurance of success. There is a choice of several methods, but the success of each and all of them is predicated upon thorough removal of the canal contents followed by complete filling of the canal, all done in the most modern anti-septic manner.

However, until more scientific light is thrown upon this phase of dentistry, and until the numerous problems related to it are more clearly understood we do not believe any dentist is justified in balancing the retention of a pulpless tooth, however important its position and however advantageous it may be from the reparative standpoint, against the health of his patient. In other words, when in doubt, after all present-day resources are exhausted, as to ability to restore a pulpless tooth to a condition of perfect safety, the tooth should be removed.

211 South 12th Street.

This paper was not discussed.

President Horton:

It now gives us great pleasure to hear Dr. W. S. Rankin, Raleigh, N. C., Secretary of North Carolina State Board of Health.

Dr. W. S. Rankin, Raleigh, N. C.:

I esteem it a rare privilege and an unusual honor to have the pleasure of addressing you this evening. The Secretary of

the American Dental Association said this morning that a man always moved and transmitted into knowledge his ideal. I intended to begin what I have to say this evening with a quotation of a statement recently made by one of New York's great preachers, Harry Emerson Fosdick. He said: "Don't imagine it makes no difference what or how you think." It is not by chance that all great men have been believed, or their greatness, because they had the courage and the imagination and the mental vision to believe greatness. Greatness is largely a matter of vision and there are all sorts of vision.

(Dr. Rankin then proceeded to deliver his address on "Helping Yourself in Helping Others.")

(Dr. Rankin's address not taken.)

President Horton:

After being confronted with such startling facts as we have been confronted with—and we know they are facts, in all reverence, we do not know whether we ought to call for prayer or for work, but I will say this that with these things facing us it is up to us, and we will have to pray and pray while we work to overcome the difficulties that Dr. Rankin has pointed out to us, that now confront the medical and dental professions. As there is no discussion of this paper, we will have the next paper by Dr. William A. Giffen, of Detroit, Michigan.

(Applause and rising salutation to Dr. Giffen.)

Dr. William A. Giffen, Detroit, Mich.:

Mr. Chairman, Ladies and Gentlemen:—I have had a great deal of pleasure in listening to these two splendid addresses here this afternoon. The conservative, sane way in which Dr. Anthony treated his subject and the informing lecture on our health work, as illustrated and explained by Dr. Rankin, are two of the finest things that I have heard and the fact that there were no criticisms or discussions following, is the highest compliment that could be paid to these. I do not anticipate anything of that sort. I am here to try and simplify by showing how the application of simplification may be applied to dental construction. There has been a great deal of mystery connected with this phase of dentistry for a good many years. When I became interested in this work first, like every other

man, I felt that it was a technical problem that if we had the right sort of technic to do each step that the problems were solved. Of course, that was brought about by the fact that there were so many of the profession who had formed some plan of technical procedure and this was the only way in which this work could be done, and so they had their group of followers and some one else had a plan by which he arrived at the same conclusion and his followers believed that was the thing to do. In that way a great deal of mystery crept into this work. The thing first to do is to make proper diagnosis of things we have to contend with and follow out technical procedure, it does not make any difference which so long as accurate, and apply these principles to the work in hand. I am going to read you a short paper and I have kept away from technical procedures as much as possible.

(Dr. Giffen then proceeded to read a paper entitled "Fundamentals of Denture Service.")

FUNDAMENTALS OF PROSTHODONTIA COMPENSATION AND SERVICE

BY W. A. GIFFEN, D.D.S., F.A.C.D., DETROIT, MICH.
President the American Dental Association

(Read before the joint meeting of the Virginia and North Carolina State Dental Societies, Pinehurst, N. C., April 30 to May 3, 1923.)

Fair play is the only basis for proper compensation from the patient, and honest efficient service from the prosthodontist.

Many patients look prosperous and like to impress a dentist with the idea that expense is of little importance to them, when an investigation might show that their clothing was not paid for. Each patient deserves the best service we can render, however, whether it be a vulcanite denture at our minimum fee, or a porcelain denture at our maximum fee. We should give him the best he can afford to pay for.

There are many members of the dental profession who waste a great deal of time trying to induce patients to decide to have professional services rendered for which they are unable to pay.

The writer is firmly convinced that it is perfectly proper and fair for the dentist to ascertain the financial status of a patient before deciding what to advise in regard to prosthetic restorations.

The patient applies for denture service either in person or by message to the secretary. If in person the secretary presents the patient with an engraved educational letter, after having secured

such data as name, address, telephone number and by whom referred. This educational letter contains the following facts: That it is necessary to make an examination and classification of the mouth as well as the construction of study models of the case, so that we may better determine the difficulties to be overcome and to outline a plan upon which to build our restoration. For this examination and classification, a fee will be charged, based upon the time consumed in making same. Then the appointment is made for some future date. If the patient did not appear in person, the educational letter is mailed to him.

The proper method of procedure when the patient returns to fulfil his appointment, is to make a careful visual and digital examination of the patient's mouth conditions with the aid of a mouth mirror and probe. Attention should be paid to the attachment of the frenum labia, the size and shape of the mouth and throat; any inflammatory areas or sinuses; the tongue, the floor of the mouth, and cheeks; the physical size and form of the mandible and maxillæ, the condition of the soft tissues, the height of the border tissue and the muscular attachments, as well as the saliva condition.

IMPORTANCE OF STUDY MODELS

To complete the diagnosis before operating upon any case, occluded study models are indispensable, as they afford lingual as well as buccal and labial views and give the operator a better conception of the procedure indicated where the preparation is to be made for full dentures. In the more difficult cases, where at first glance it appears that the removal of considerable alveolar process is necessary, it is advisable to make a second set of study models and carve to represent the arches following the extraction of the teeth. This procedure is followed in order to avoid trimming in excess, a mistake that is very easy to make and one that is irremediable. It is also a great help to the prosthodontist from an esthetic standpoint, to have a compound impression in which the natural teeth can be placed after extraction showing their natural arrangement. Such models are of assistance to the dentist in the reproduction of the original set-up in those cases where indicated. However, in many cases we know nature can be improved upon by changing the natural teeth arrangement or typical form; and by comparing these models with the reproductions, all of the destructive arguments sometimes presented by relatives and friends of the patient, that the dentures are not correct, can be refuted. Then, too, for business or social reasons, our patient cannot afford to be without teeth, and if new dentures are to be placed in the mouth immediately following extraction the study models are of great assistance in constructing them. Of course it is expected when dentures are immediately placed after trimming the process, that it will be necessary to rebase them in a few weeks.

The study models furnish us with an opportunity of classifying the mental attitude of the patient, as they are a great help in demonstrating to the patient abnormal conditions, as compared with normal. They also demonstrate the natural typical form of the alveolar ridges, which indicates a difference in the surgical treatment, as will be shown later. This procedure helps to establish the confidence of the patient in the operator and is especially helpful in abnormal cases, as the time has passed when the dentist can afford to sacrifice efficiency in dentures, as well as personal appearance of the patient, through ignorance. Some one will inform the patient that an injustice has been done him, as the unsightly conditions might have been greatly improved instead of being made more conspicuous. The study models have the added advantage, in that they can be utilized for the purpose of making individual trays that will require the minimum amount of material to make a correctable impression.

If any degree of success is to be hoped for in the art of artificial denture construction, it is imperative that we have a good foundation upon which to begin construction. When we consider how small the degree of efficiency of artificial dentures is, compared with the natural masticatory apparatus, and when we think of the difficulties encountered to obtain this small result, even under normal circumstances, we realize that the importance of surgical interference to correct any abnormality of the maxillæ cannot be too greatly emphasized. The dentist no longer finds it necessary to consider these irregularities of the alveolar ridge, as permanent or fixed barriers around which he must construct his dentures, but, much to the contrary, he plans the surgical shaping of the arches as the builder clears ground for the construction of his foundation.

At this time we should refer to the study models, bearing in mind the typical form of the arch we are operating upon and remembering the following facts regarding physical size: (1) Large upper or lower affords the greatest possible advantages for stabilizing the dentures; (2) medium size affords less advantage for stabilizing the denture; (3) small size presents much difficulty in stabilizing dentures, consequently much less efficiency in service.

As a general principle, the alveolar ridges should be leveled on their bearing surface as much as possible, simply rounding the lingual margin to remove sharp ridges. The buccal margin should be beveled to accommodate the ridge lap of the teeth and eliminate abnormal irregularities.

In Class 1, or the square type, we usually find the ridges very strong in their cuspid or bicuspid regions, and it is necessary to bevel the buccal margins higher at these points than any other typical forms.

In Class 2, or the tapering type, we find it necessary to make the long bevel on the labial ridge, near the median line and also to

eliminate much soft tissue from the bearing surface of the tuberosities in order to get a level bearing and greater stabilizing value for dentures. It is in this typical form that we usually find a narrower throat and a greater amount of soft tissue around and between the tuberosities, or in other words more displaceable tissue.

In Class 3, the ovoid type, the long bevel is also usually necessary in the labial ridge near the median line.

Both sides of the arch should be made as symmetrical as possible in order that the artificial teeth may be placed on the ridge in their proper positions.

Smoothing of all margins is accomplished by thick heatless stone, which is drawn up and down over the sharp edges and produces a very smooth result. The stones are preferred to files or curets, as they are easier to manipulate and there is less danger of laceration of soft tissues, which means less discomfort to the patient and a rapidly healing wound.

Only in an emergency are cases sutured, because when suturing is omitted: (1) The length of the operation is lessened and the shock to the patient decreased and also the unnecessary work for the operator reduced. (2) Open drainage is most desirable. Oftentimes a small sequestrum of process will be exfoliated and work to the surface and there will be no unnatural force opposing its exit. Then, too, it is never necessary to remove a suture to allow drainage, should there be a recurrence of infection or suppuration. (3) In the act of smiling, talking, eating, etc., the mucoperiosteal flap and the attached muscles are allowed to take their natural position in relation to the arches, when there is no suturing. The most that can be said for suturing in these cases is that it is very spectacular.

TEST IMPRESSION

A correct or test impression must possess the following qualifications and these points should be borne in mind when making a classification of the patient's mouth:

First. It must be properly seated with the strain on the hard and soft tissues equalized as nearly as possible, and when stress is applied to the impression it should not rock or slip.

Second. It must be the proper length in order that it will not interfere with the pharyngeal muscles during the act of swallowing or coughing, nor must it be so short that it does not pass to the distal edge of the hard palate, thereby having adhesion broken when stress is applied at the anterior region.

Third. The rim of the impression should be adapted as perfectly as possible to the labial and buccal aspects of the ridge and extend as far over the ridge as possible without interfering with or placing undue strain on the attachments of the muscles to the maxillæ, in order to take full advantage of all retention in a given case.

For the lower jaw, the same principles must be followed and in order to get the best adaptation, care must be exercised so there will be no interference with the muscle attachments, especially those at the mylohyoid and external oblique ridges.

It is the writer's belief that the application of principles involved in the making of impressions of edentulous mouths is accomplished more accurately with modeling compound, and with less inconvenience to the patient, than by any other method.

The dentist must and should be the architect or engineer of the case and be able to explain to the patient what should be done and why. The patient can readily realize that for such services and advice, a consultation fee should be paid. By explaining and elaborating, the patient's attitude toward denture service, and his or her estimate of its character and importance, can be elevated so that the mind is well prepared for considering the amount of the fee quite secondary to the character of the operation.

HOUSE'S CLASSIFICATION

Having classified and tabulated the conditions, the patient is dismissed for this sitting and referred to the secretary who collects the examination fee, which is based on the time consumed, and makes another appointment with the patient, at which time the findings can be explained to him on the study models and the record of the tabulations which have been summed up.

Models and casts of each case should be made of material in which the minimum amount of expansion and contraction takes place. Either artificial stone or good model plaster, reinforced with approximate metal models, are of sufficient density and strong enough to swage soft metal trial plates over with a rubber block swager.

Metal trial plates have every advantage possible. They fit as accurately as the finished dentures will fit. The heat of the mouth will not cause them to soften and bend out of shape; they will stay in position while we register central occlusion, requiring the minimum amount of wax. The patient will not object or become fussy while we are building on or trimming the wax for feature restoration.

DENTAL ARTICULATORS

The National Society of Denture Prosthetists have laid out certain definite specifications for a test of mandibular cinematics which we believe will be a satisfactory test.

Definition: A dental articulator is a device which will reproduce the masticatory movements of the human mandible within the range of occlusion.

1. Produce accurate casts of occluding surfaces of natural teeth (teeth must present reasonable stability); from plaster of Paris

impressions poured with an alloy of Melotte's metal, two parts, and Sharp's metal, one part.

2. Casts shall be mounted on an articulator by means of a face-bow (or its equivalent) and adjusted to central occlusion. The maxillary cast shall be mounted with a detachable base presenting plane surfaces.

3. Check-bites shall be made which will register right lateral, left lateral and protrusive occlusion.

Material used for check-bites shall be softened enough to permit actual puncture by occluding contacts and thick enough to register relationship completely.

4. At least five cases shall be thus tested, including some presenting pronounced asymmetry.

5. A thickness gage shall be used to measure vertical deviations showing along three parallel lines (median and both posteriors); horizontal deviations of the continuity of these lines shall be measured in millimeters.

Definition: Central occlusion of the teeth is that occlusion from which any movement of the mandible introduces an opening movement.

The writer is firmly convinced that efficient dentures can be built on any of the so-called anatomical articulators, as they will register measurements as close as the resiliency of the anatomical structures can be measured. Therefore it is evident to me that any further progress in articulator construction must be made in the direction of simplicity, precision and reduction of cost.

The subject of the selection of artificial teeth is of vital importance to our professional success in all branches of dentistry. It is imperative that concerted effort be made to simplify and refine the underlying principles of this subject into fundamental, tangible laws that dental students can comprehend and apply in a practical way in the clinical laboratories of our dental colleges.

Dr. Williams has proved conclusively by his scientific research work that harmony between face form and tooth form is the true basis upon which we must teach dental esthetics, and which theory has been accepted by both Heckel and Wallace, two of the greatest living scientists, as being an established fact. This being true, great care must be used in preparing the dental student's mind to comprehend the problem of determining face form. This problem must be based upon normal anatomical development, especially of the head and face, the form of which for convenience has been typified as being square, tapering or ovoid and represented respectively as being Class 1, Class 2 or Class 3.

It is the writer's belief that in the selection of forms of artificial teeth to harmonize with the typical forms of face, we should limit our teaching in the colleges to the three typical forms: the square, tapering and ovoid. I do not wish it to be understood, however,

that I would discourage any one pursuing this study or from making further investigations in order to produce higher degrees of harmony.

Since we have accepted the three typical forms of faces, designated as the square, tapering and ovoid, we must have three typical forms of teeth to harmonize with these typical face forms, each type of which should be manufactured in three sizes, small, medium and large.

In the process of development, the anatomical and alignment forms of the arches conform to the face form, thus a square type of face will have a square type arch, and a square alignment of the six anterior teeth, and a tapering face will have a tapering arch and a tapering alignment of the anteriors, and carrying it farther, the ovoid type of face will have an ovoid arch with an ovoid alignment of the six anteriors, each of which may be modified by the other types. This theory has been beautifully worked out and illustrated by Dr. A. Alfred Nelson of Detroit, in a drawing to illustrate the harmony between face form, tooth form and alignment form, which he has aptly named the Esthetic Triangle.

VULCANITE

Drs. Snow, Wilson, Gysi, Engstrom, Nelson and many other investigators have demonstrated that when rubber compound is converted into vulcanite, we have a substance with greater specific gravity, but with less volume. The change has produced shrinkage.

We must accept these findings and realize that such changes in vulcanite denture construction cannot be entirely eliminated. The question for us to consider is the best technical procedure for us to follow, in order to minimize these changes which cannot be prevented, and in order that they will be so slight as to render misfits in denture work practically insignificant.

Therefore accuracy in every step of the technical procedure for applying the fundamental principles, must be our watchword from the time of the patient's first appointment until the dentures are properly seated upon their foundations in the patient's mouth, and any malocclusion which was present has been eliminated.

905 STROH BLDG.

Dr. Otto U. King, Chicago:

What do you think of surgical interference practiced today? May I bother you to tell in detail?

Dr. Giffen:

Unless you have an abnormal growth in the three types of arches you should eliminate as little of that labial buccal plate of the process as possible. If you have a case necrotic, involving the buccal process from the roots of the molar, I feel that

there are two things necessary: one the elimination of any disorganized tissue and the other proper drainage. In all these cases in which the gingival third of the process is strong I would prefer to curette through the socket, but save the gingival third of that buccal process, for the reason that while that may not be all osseous tissue that fills in, there is enough connective and bone tissue to make a good set and retain the form of the arch. I have a case here, I will show in the clinic, that was operated on just one month ago. The man had a full complement, he may have lost one or two molars. This patient was operated, it took two and a half hours, and I made a periorbital flap outside and inside, trimmed off the crest of myelohyoid ridge, and he said himself, "the process is all eliminated," and he said, "You might as well take off as I am going to lose it any way." I saw the patient two or three days afterwards, when the patient was sent into the office to remove the stitches, and I took an impression of this man's mouth that day. I have models taken at that time and two weeks afterwards, and also models of the dentures that have been made for him. Now the surgical work was done beautifully, but there is no stabilization value to that lower arch at all. I think it is a menace to dentistry to have that kind of work done. If that is what you mean. The surgical work was well done, the patient's mouth healed up in splendid form, that is to be expected, but you would think to look at him now that the patient had worn dentures for years and badly fitting dentures at that, where maximum amount of absorption had taken place. There is not a practitioner here who has not seen many, many cases where they have worn dentures approximately good fitting dentures, where they have not seen these mouths in splendid shape after years and years of service and the only argument in this particular case was well, he is going to lose that sooner or later. If he had that he would not have needed to become accustomed to artificial dentures for five or ten years. Another statement the operator made to me, "If I take all that alveolar ridge off these dentures won't have to be rebased." I do not believe any one can make a permanent plate, except the undertaker. I am going to follow that case through. I took advantage of everything and have impressions of this particular case and

will have access to that particular case for some time. Fortunately for the patient, he had a well-formed mouth; it was a Class 1, from physique, form and size, and all that. He is in good physical condition, his muscular condition is good and he is getting along well, but I think he would have been so much better off had he just simply had these teeth extracted, and if necessary beveled to accommodate the ridge left a little closer after the incision. He would have retained that symmetrical form for the custodial incisors. It is beveled inwards and every time he opens his mouth he is going to have to carry that upper anterior on his tongue. That is the thing we are trying to get away from. Where from lack of development of the dental arches it is hard to get away from. Here they take these cases and mutilate them so they practically make a case that looks as though it had never been fully developed.

President Horton:

Is there any discussion on Dr. Giffen's paper?

Dr. M. B. Rudd, Richmond, Va.: I would ask if Dr. Giffen uses tempering to bend to secure his set, and also whether he does any mouth grinding?

Dr. Giffen:

About the best tempering in the Class 1 case, it depends largely upon the mouth condition. Suppose you have a spongy area in a tapering case where considerable thickness of mucosa along the distal margin of the hard palate; in that case I frequently use a small rope of setting-up wax—I meant to say black wax—you use and just run from one tuberosity to another across the distal margin and use to test and then put pressure on it at the distal ends. Let it warm so there is not too much pressure, although I have not had any bad results from pressure atrophy. I think it is unbalanced setting that causes tissue change that takes place in many of these cases. Of course, where teeth have been lost through pyorrhea, you find the greatest change in these cases, they melt down like a sand heap in a wind and you cannot be sure, there is only one thing to do in these cases to recognize these as treatment cases and explain to the patient that they will have to be readjusted from time to time. That is the only way to handle these cases. I do not think there is any necessity of sewing it in place. Re-

garding the mouth grinding, I do not use it. I use a precision instrument, take my test bites under pressure after they have been seated for 24 hours, or two or three days, and by biting into stiff wax they get test bite and central occlusion and grinding them to that central occlusion. The time you must have denture seated properly is when you step on them. If you are out of line you are going to skid. As far as grinding in the mouth, there is this difficulty, you start to grind planes in certain direction and they will follow that direction, but too far. A little grinding would not do, possibly, any harm, if you have one or two high points, but you get that even to left lateral that you will, after you grind on precision machine.

Where you have a flap of connective tissue it is like stepping on a rubber ball. Cut it off. You must have as solid a foundation as you possibly can have. There is no treatment by which you can get best results by filling over that sort of foundation.

Dr. B. T. Blackwell, Richmond, Va.:

Do you suture when you cut off?

Dr. Giffen:

No. Make incision on either side of ridge. That comes right back in twenty-four hours, closes up. Put a little cotton in a little saline solution, it will heal up in a week's time, and it is the proper thing to do. I will show the models and so on of most of this stuff I have shown slides, most of the fellows can ask me at the clinic.

The President:

I thank you, Doctor.

President Horton:

There will be a meeting of the Executive Committee immediately in the parlor on the left hand side of the hotel, close to the office, to pass on some applications. There will be a meeting of the House of Delegates of the North Carolina Dental Society here immediately following the meeting. As there is no further business this meeting stands adjourned.

Adjourned 4:45 p.m.

MEETING OF THE HOUSE OF DELEGATES

APRIL 30TH, 4 P.M.

The House of Delegates was called to order by the President, Dr. Horton.

The Secretary called the roll of the delegates:

Dr. S. Robt. Horton, President.
Dr. R. M. Morrow, President-Elect.
Dr. B. F. Hall, Vice-President.
Dr. H. O. Lineberger, Secretary.
Dr. E. G. Click, Treasurer.

DELEGATES FROM FIRST DISTRICT:

Dr. Wm. F. Bell, Dr. J. R. Osborne, Dr. F. L. Hunt, Dr. A. B. Holland, Dr. D. E. McConnell.

DELEGATES FROM SECOND DISTRICT:

Dr. S. B. Bivens, Dr. Whitfield Cobb, Dr. J. F. Reese, Dr. F. C. Johnson, Dr. W. C. Houston.

DELEGATES FROM THIRD DISTRICT:

Dr. W. F. Clayton, Dr. R. M. Morrow, Dr. D. F. Keel, Dr. O. H. Hester.

DELEGATES FROM FOURTH DISTRICT:

Dr. E. B. Howle, Dr. A. H. Fleming, Dr. W. L. McRae, Dr. P. L. Pearson, Dr. J. F. Coltrane.

DELEGATES FROM FIFTH DISTRICT:

Dr. R. Weathersbee, Dr. J. N. Johnson, Dr. L. R. Gorham, Dr. J. R. Edmundson, Dr. J. G. Poole.

MEMBERS OF EXECUTIVE COMMITTEE:

Dr. R. M. Squires, Dr. W. M. Robey, Dr. J. S. Spurgeon.

MEMBERS OF ETHICS COMMITTEE:

Dr. F. A. Macon, Dr. J. E. Banner, Dr. J. P. Bingham.

DELEGATES FROM STATE BOARD OF DENTAL EXAMINERS:

Dr. J. H. Wheeler, Dr. J. Martin Fleming.

The matter of sending clinicians to the American Dental Association meeting in Cleveland was brought before the house and discussed.

Dr. J. N. Johnson moved that the President appoint the clinicians.

Motion was seconded by Dr. A. H. Fleming.

After discussion the motion was withdrawn and another motion was made that the Clinic Committee be instructed to handle the matter.

Discussed by Dr. J. N. Johnson.

Dr. W. M. Robey moved that a committee be appointed to select the clinicians from the clinics given at the meeting now in session.

The motion was seconded and passed. President Horton appointed for this committee, Dr. W. M. Robey, Chairman, Dr. J. Martin Fleming, Dr. J. H. Wheeler.

Dr. J. Martin Fleming moved that Dr. J. R. Osborne of Shelby, N. C., be placed on the list of Life Members.

Motion passed, and a rising vote was taken which proved unanimous.

Dr. Whitfield Cobb moved that a paper read by Dr. J. Martin Fleming on "Some History of Dental Organization and Dental Law in North Carolina" be read at this meeting.

Motion seconded by Dr. J. C. Watkins.

Dr. Fleming requested that he be allowed to keep the paper for reading at the 50th anniversary of the State Society.

Discussed by Dr. W. M. Robey and Dr. J. N. Johnson.

Dr. R. M. Squires offered the suggestion and a substitute motion that the paper be presented to the Society at its 50th anniversary meeting next year.

Motion was seconded and passed.

Dr. H. O. Lineberger presented to the House of Delegates for discussion, the proposition of the State Society joining with the State Board of Health in sending a Health Exhibit to the Cleveland meeting of the American Dental Association, September 10-14, 1923.

The matter was discussed by Dr. J. N. Johnson and Dr. H. O. Lineberger.

Dr. J. N. Johnson offered the following motion: "That the Health Exhibit be sent to Cleveland, providing the expenses paid will not exceed one-half the total necessary expenses of exhibit."

Motion was seconded and passed.

Dr. R. M. Squires presented the following applications for membership in the Society: A. D. Abernathy, Granite Falls; O. J. G. Barnett, Badin; F. D. Castlebury, Raleigh; H. B. Foster, State Board of Health, Raleigh; J. E. Holt, Cherryville; H. L. Keel, Durham; Matt McBrayer, Rutherfordton;

S. E. Malone, Goldsboro; O. P. Smith, Asheville; Thos. W. Smithson, Rocky Mount; F. H. Underwood, Wilson; A. E. Worsham, Henderson; G. N. Yates, Fremont.

The names of S. E. Malone and A. E. Worsham were discussed in reference to their time served in the World War, and the matter was referred back to the Executive Committee for further investigation.

The House of Delegates adjourned for one minute.

The House of Delegates called to order by the President.

The names presented, with the exception of S. E. Malone and A. E. Worsham, passed the second reading and accepted as new members.

MONDAY EVENING, APRIL 30TH, 1923

The President of Virginia State Dental Association, Dr. W. M. Sturgis, Warrenton, Va., called the meeting to order at 8:30 p.m.

President Sturgis:

The first speaker this evening will be Dr. J. A. C. Hoggan, Dean and Professor of Orthodontia, at the Medical College of Virginia. Many of you know Dr. Hoggan, certainly know of him, and I feel sure that you will get something worth while. I hope all present, all of them, or as many as feel they can, will discuss papers this evening. I think it always brings out something that we have not got before and I hope that the papers will be freely discussed. Dr. Hoggan. (Applause.)

Dr. J. A. C. Hoggan, Richmond, Va., then presented a paper entitled "Elementary Principles in Orthodontic Treatment."

(Dr. Hoggan's lantern slide lecture could not be taken. The discussion follows.)

President Sturgis:

Gentlemen, you have heard this excellent talk of Dr. Hoggan's. I am sure you have enjoyed it. It is open for discussion. It is a subject which not only the specialist, but the general practitioner can talk about and I hope that we will have free and generous discussion of the subject. I know this is a subject which all men practicing are interested in. It is a subject which we all have to deal with in one way or another and I hope we will give this the discussion it deserves. I notice

among this audience there are specialists in orthodontia and I hope they will give some talk on this subject.

Dr. R. Byrnes, Atlanta, Ga.:

I would ask if in his experience with the older patients, that is, older than children, just what experience you have met with results from traumatic occlusion which might induce, or tend to induce, pyorrhea, as a matter of information? I am rather interested to know that.

Dr. J. L. Walker, Norfolk, Va.:

I have enjoyed this paper very much. The care that the patient gets during the orthodontic treatment and the care he gets from the specialist. It seems to me that we have less trouble from the decay and other troubles that we have in the mouth during that period than they have when they are not wearing these appliances. I have never heard any one speak of it in that way before, but I find I believe it is entirely right. The general practitioner, if we are blamed for little troubles that they have during wearing of appliances and the like, it seems to me that we see less trouble in our patients during that period than we would if they were not wearing these appliances.

Dr. W. H. Pearson, Norfolk, Va.:

I enjoyed Dr. Hoggan's paper very much. He gave three methods by which the bite might be changed. He left out one which he evidently overlooked, that is the bite plate which I found very successful in opening that bite and I would be very glad to have Dr. Hoggan have something to say on that line. I fully endorse what Dr. Hoggan said. I am sorry I did not get in to hear the first part of his paper. There is another thing I would like to bring to your attention, that is the necessity for very early treatment. He spoke of the dentist having a patient and a question in their mind as to the proper time to send to a specialist. The earlier the specialist can get a patient the best results can be obtained and more quickly. I have gotten a great many patients from dentists in which they said "wait until you get permanent set of teeth, there is no use in correcting the temporary set." No greater error is made. The time to correct is just as early as can be found. The earlier it is corrected the better. I am going to give a little clinic Wednesday. I treated one 18 months old. That was accomplished

in 12 hours. If they had waited until five years it would have taken much longer. I would insist upon early treatment for the best results.

Dr. C. E. Harper, Danville, Va.:

Although I am not a specialist at all, I have tinkered with orthodontia and I was struck with what Dr. Hoggan said of discipline of patient. Two cases I had for a good many years I was forced into it, we had no specialist in our town. I have sent some patients to Dr. Hoggan. Unless the first patient has thoroughly made up his mind that he wants—unless the patient goes into it with the idea that he wants to go into it and willing to stand things, it is a very uphill matter to attempt from the viewpoint of the general practitioner. Unless the patient goes into it himself you will have very uphill road to travel. I think it is very important that we try to persuade patients of the importance of treating malocclusion, but for the start have the patient under control so that he will do as we say and have him make regular visits so we may give them proper treatment. General practitioners could do a great deal more in this line than he does do. All of us have seen patients who with a little treatment their mouths could be placed in better condition. If asked why they did not have their teeth attended to, in nine cases out of ten they will reply, "Doctor So and So was my regular dentist and he never suggested anything was the matter with my teeth." I think the general practitioner whenever he sees malocclusion should tell about it and what ought to be done and if he does not want to undertake it refer to a person who would, so in later life the patient will not lay the blame on that general family dentist.

Dr. Hoggan (closing discussion):

Mr. Chairman and Gentlemen: I merely wish to reply to Dr. Byrne in this particular way that if through traumatic occlusion pyorrhea, or the condition known as pyorrhea, is evident in the mouth it is too late to correct that condition by the movement of the teeth. That is my opinion. The time at which that particular traumatic occlusion should be corrected is while the patient is within the range of those years to which the field of orthodontia belongs, that is during the eruption of teeth, that is during childhood. Anything else in the way of

correcting the traumatism must be done by the dentist. The tissue which the individual has will not respond by stimulation in the normal way to correct the traumatism and therefore it is just past the day in which it can be done. In regard to bite plates, the reason I did not mention the bite plates is because I don't use them. Dr. Pearson, Dr. Howard, probably like a bite plate. I just don't. If I want to change I use a bite plane.

It is a matter of preference. Probably Dr. Pearson could use a bite plate without plane better than I could use a bite plane. I always feel in regard to orthodontia, when presenting to an audience of this kind, that it is not just a subject in which the average man is interested. If I can get some man really interested in orthodontia around me, but I so often have felt the boredom of the men who are listening to me when they are not interested in orthodontia and for that reason I know that there is something else on this program which you are very much more likely to enjoy. I thank you very much for your kindness.

President Sturgis:

Dr. Royster, of Raleigh, is down on the program for a paper, he is unavoidably detained and if possible will come on Wednesday and if so, further announcement will be made. The next paper is entitled "Primary Closure of Mouth Wounds," by a man who has had large experience on this line and has been a representative on the State Board of Health of Virginia, Dr. Guy R. Harrison.

Dr. Guy R. Harrison, Richmond, Va.:

Mr. President, Ladies and Gentlemen: I am down for discussion of the subject under title "Primary Closure of Mouth Wounds." Now, I shall not attempt to describe certain phases of technique because I don't think it is fitting in the way in which I hope to present this. I want you to read the synopsis in the program and bear in mind and in answer, if question arises in your mind as to their correctness, please refer to that and get distinctly in your mind what I mean by primary closure and also type of cases in which I believe it to be indicated. The synopsis says: "The term primary closure as here used does not mean immediate tight suturing of wounds as is done, for example, in the wall of the abdomen in non-drainage cases, or in closing the incision after a carotid ligation, but has reference

to the application in the surgery of the mouth of those well recognized principles governing plastic surgical procedures. One of these principles is that the chances of success are made much greater if the operative manipulations are done before the formation of cicatrices. Primary closure, then, offers much better prognosis than delayed closure in so far as the prevention of deformity and interference with function is concerned."

(Dr. Harrison then proceeded to give his lecture. Lantern slide.)

President Sturgis:

Gentlemen, you have heard this most interesting discussion of this subject. I am sure there are men here who are more or less interested in this class of work. We will be glad to hear from you.

Dr. H. Wood Campbell, Suffolk, Va.:

I have been very much interested in the paper as read by Dr. Harrison tonight and the lantern slides and I would be very much delighted if I were able to discuss a paper of that kind. I don't think it is probably just to the essayist to let a work of that kind go by without having some remark in reference to the significance of it. It seems to me that this paper as read by Dr. Harrison marks an epoch in oral surgery and work done by the dentist. I realize the fact that very few of the general run of practitioners would attempt to do any of the work that was outlined by Dr. Harrison here tonight. However, the question of cancerous formations in the mouth has been brought very forcibly to the attention of the dentist by the leading surgeons of the United States, especially Dr. Bloodgood, of Baltimore, and others, who have tried to draw the attention of the dentist to these very serious maladies. It seems to me as members of the dental profession we should thank Dr. Harrison for his admirable paper and congratulate ourselves that we have a man who is capable of doing such work as he outlined. Of course, he did not go into the technique of these operations, it was impossible, I suppose, for him to do that. He has drawn our attention, however, to certain mouth conditions which should exercise every man who looks into the mouth. Personally, I wish to thank Dr. Harrison, I am somewhat familiar with some of his work and it gives me a great

deal of pleasure to be here tonight and hear the paper that he has read. As is known, Dr. Harrison was in Europe with the McGuire Unit and he had probably an opportunity to observe conditions and wounds of the mouth, etc., which the average man would not see. I am thankful to you, Dr. Harrison, for having the privilege of hearing your paper tonight.

Dr. J. C. Watkins, Winston-Salem, N. C.:

I was very much interested in Dr. Harrison's work and have watched it for some years.

Dr. H. N. Walters, Warrenton, N. C.:

I am thoroughly incompetent to discuss Dr. Harrison's paper. I know Dr. Harrison is thoroughly competent to do anything in dental surgery he undertakes. I have known him personally for a number of years, and I have seen him operate, I have seen his office and equipment and I have seen a great many of the actual cases in his office that he showed on the screen tonight and the work that he does is wonderful, indeed, and I am just thankful I live only a hundred miles from him and can refer some cases of dental surgery to him and I have yet to refer a case without getting good results and I want to thank him for his paper tonight.

Dr. Harrison (closing discussion):

I am indeed appreciative of the kind things which you gentlemen have said and I cannot tell you how much I really do appreciate it. There are so many phases to this work and I was very sure that some of the gentlemen were going to take more issue with me, because I know, as many of you do, because I know that some of the principles for some of the procedures advocated are quite radical from the viewpoint of so many practitioners and to those who are not familiar with this fact I want to call your attention to the fact that in other fields of the body we are coming to think and accept that in well selected cases and with good operative ability that surgeons can close known infective wounds safely. If you are interested, if you will look up the work of Willis for closure of wounds for gall-bladder surgery, it is very rational, but it was so striking that at the last meeting of the American Academy of Surgery Willis was asked to be present, quite a compliment. Also remember that the sole object here is not only to cure your patient, but

the other object is to prevent interference of function and deformity as much as possible. I want to thank you again.

President Sturgis:

The next on the program is "Selected Cases Taken From Practice," by Dr. F. L. Hunt, of Asheville, North Carolina.

Dr. F. L. Hunt, Asheville, N. C.:

You have been treated tonight by specialists and it is my privilege to give you a few cases from the general practitioner's viewpoint.

(Dr. Hunt then proceeded to read his paper.)

SELECTED CASES TAKEN FROM PRACTICE

(Illustrated by lantern slides.)

DR. F. L. HUNT, ASHEVILLE, N. C.

Perhaps unusual impactions will form a most interesting group to many, and it has therefore been deemed wise to discuss that group first. While these cases appear somewhat out of the ordinary to the writer, it is not expected that the same condition will prevail with all the hearers.

No. 1. This case shows an undeveloped, unerupted third molar in the upper jaw of a girl eighteen years of age. Paroxysms of pain began and occurred intermittently at intervals of from one week to ten days frequency, gradually becoming more frequent until they occurred several times daily. These frequent paroxysms resulted in a nervous physical exhaustion which naturally became unbearable. The cause was most likely a backward pressure of the undeveloped root apices upon the sensitive pulp tissues. The removal of the third molar effected a prompt and permanent cure.

No. 2. Here is shown an impacted cuspid in the upper jaw, the unusual feature of which isn't so unusual after all, as many of you have probably observed. The impacted cuspid, together with the infected root canals of the centrals, and the remnant granuloma shown in the lower jaw, apparently being the chief causative factor in a nervous, general anemia, accompanied by chronic lumbago and persistent febrile disturbance. This patient was being treated for tuberculosis. After cleaning up all infected areas and removing the impacted cuspid, the patient gradually improved and is today a strong, healthy and robust man, doing a man's work every day.

No. 3. The impacted cuspid and third molar shown here present an interesting history: Several granulomas and an extensive pyorrheal condition were found. The patient suffered from periodic arthritis for several years until his condition had become quite alarming. After an abscessed second molar had been removed as

a possible factor in an acute attack of arthritis, and without apparent result, the case was presented, when a general examination of the mouth was made with the results above noted. The impactions were removed and all infection cleaned up except one lower molar. An immediate improvement was manifest with an apparent cure, which continued for about two years. And here is the interesting history in this case: The patient was an old gonorrhoeal case and he was warned that a return of his arthritis would most likely occur. Following two years of relief from arthritis, another attack, rivaling any previous one, occurred. The infected lower molar was removed and curetted, tonsils were removed and a strict diet maintained, with an apparent relief from further arthritis. Another feature in this case is the most intemperate appetite, in which meats and highly spiced foods are indulged in. The prognosis in this case would not be considered favorable.

No. 4. Here is a referred patient suffering from so-called neuralgia. A hasty diagnosis was made in this case and the impacted third molar removed without relief. A further careful examination showed the pyorrheal pocket distal to the first molar and the cavity of decay on the distal aspect of the posterior buccal root, which proved to be the real cause of pain. This case should teach a valuable lesson.

No. 5. The impacted cuspid here shown emphasizes the possible pathological condition which may result from their non-removal. The incisor was, of course, an important factor in causing the area of infection which completely surrounded the crown of the impacted cuspid. This patient manifested all the symptoms usual in general debility and in addition thereto, an intermittent febrile disturbance.

All symptoms disappeared after the removal of the impacted cuspid and the clearing up of all infected areas.

No. 6. The impacted cuspid here shown has an interesting history. The patient was a captain in the German Merchant Marine, and during the war, was interned at Hot Springs, N. C., for a period of time. He had complained of trigeminal neuralgia for the past twelve years, having been treated in the hospitals of New York and Berlin during periods for that length of time. X-ray examinations of suspected teeth had been made without determining the seat of trouble. A thorough and complete examination was suggested and the impaction shown here was discovered. And just here, especial emphasis is made of the necessity of complete x-ray examinations being made. The removal of the impacted cuspid resulted in complete recovery.

No. 7. Here is shown another case where a partial x-ray examination of only suspected non-vital teeth had failed to locate the serious impaction. This patient has been in a really pathetic condition; she had gone from physician to dentist, and from physician to physician and from dentist to dentist, seeking relief. She was

considered a neurasthenic, and for that reason, perhaps serious consideration was not always given her. She complained of intense and quite persistent trigeminal neuralgia and manifested marked symptoms of cerebral neuritis. It might also be mentioned that several non-vital teeth were found. She suffered from intestinal disturbances and chronic constipation, heart appeared normal and no temperature prevailed. All dental infections were cleaned up, and the impacted cuspid removed, however, progress has been extremely slow, though after two years, considerable improvement is shown. There is no doubt of a true neurasthenia, which probably accounts for the slow progress. Several years ago the patient was thrown from a horse, causing a severe nervous reaction, which may also play a part in her condition.

No. 8. Here is an unusual case showing three impacted third molars in the mouth of a lady seventy-two years of age, and it is a case we all dread—a nervous little old lady who has suffered for years and at last determined to try the last resort; i.e., have her teeth removed. As usual, several non-vital teeth, all infected, are found, and alas, in addition, three impacted third molars. There is the usual feeling of intense pressure in the posterior region of the head; tension and soreness in the muscles of the shoulders and neck: a feeling of general malaise, depression, a sallow complexion, constipation and nervousness, with that insufferable feeling of uncertainty as to possible recovery. The non-vital teeth were removed and curretted, and the impacted third molar was removed from the upper jaw during November and December, and now, that little old lady with white hair and sallow complexion, who didn't care much what happened last November, is a real live, little old lady with a clear complexion, and a clear eye and so interested in life that she is planning a trip North this summer, and who is thoroughly imbued with the idea that life is worth living.

No. 9. Here we have the impacted third molar at age sixty-four, and that rheumatic condition in the muscles of the neck and shoulders, with that feeling of intense pressure in the posterior region of the head. The impacted third molar, the non-vital second molar, and the first molar roots have been removed, with a marked feeling of relief a month after the operation. The other non-vital teeth will later be removed. Attention will possibly be given to the dense radio-opaque tissue shown in the maxilla, though this is probably entirely inert. A similar radio-opaque tissue will be shown later.

No. 10. Here is shown the most complete impaction of a lower third molar thus far observed, and the history of the case likewise interesting. The age of the patient is about forty-six. At the age of seventeen she gave up her music because it was believed that practicing caused neuritis in the left arm. This neuritis persisted from age seventeen to age forty-six, becoming gradually more intense and persistent with the passing of time. Finally she was

unable to raise the left hand to her head, and the neuritis became exceedingly aggravated. The removal of this impacted third molar effected a complete cure of the neuritis and restored fully the use of the left arm. Another interesting feature in connection with this case; you will note here the sheath of the inferior dental nerve. Clinically, this proved to be on the buccal side of the tooth. Since the tooth tissue is the densest tissue in the human body, this fact is significant.

No. 11. This case is extremely unusual, but to many it will be most common, no doubt. You see here an impacted upper fourth molar. This tooth is in captivity and can be shown. Case referred by a psycho-analysist who could find no reason for an extremely nervous condition, together with a neuritis extending in the muscles of the back, also a feeling of depression manifested itself. A thorough examination revealed the tooth here shown. All other teeth appear normal and respond to the Faradaic current. This impacted fourth molar was removed December twenty-ninth, 1921. On May fifteenth, 1922, the patient wrote that he saw no improvement. Scarcely enough time had elapsed to show a marked improvement, and furthermore, the patient has not been examined since January, 1922, first, either by the psycho-analysist or by me. However, the result of the operation is uncertain.

No. 12. The impaction here shown is of a type frequently met with. Patient sixteen years of age with temporary cuspid still in place and a decided impaction of the permanent cuspid. From observation, it has been shown that these temporary cuspids are retained until the patient reaches the age of thirty to thirty-five, when the tooth is finally lost, with the result that all teeth are out of their natural alignment with the necessity of tooth restoration and a possible pyorrhea. But most important is the possibility of a pathogenic condition later. With these thoughts in mind, as well as for æsthetic reasons, the treatment shown here is advocated.

No. 13. The case shown here is so similar as to require but slight discussion other than to point out the more horizontal position of the impacted cuspid. This case is not fully completed.

No. 14. The condition shown here is somewhat unusual. The granulamatus area appears to involve both central and lateral, whereas the central is vital, as was proven by the Faradaic current. In the second picture, you see the result of an apicoectomy six weeks after the operation, showing newly granulating osseous tissue. It might be mentioned that clinically, the darkened area appearing in the apical region of the central was considerably toward the palatine plate, and at no point in relation to that tooth.

No. 15. This slide shows a picture so similar to the previous one as to require no especial discussion. Each case, however, emphasizes the importance of testing all suspected teeth for vitality, and in this connection, no better method has been found than by the

use of the Faradaic current. Each case also emphasizes the fact that a radiograph cannot always be relied upon by itself, but only as an aid to diagnosis.

No. 16. This case shows the result of an old extraction in which the granuloma had not been removed. Clinically, the entire field shown in the first picture proved an extensive granuloma on April twenty-second, 1920. After root-filling, the case was operated May eighteenth, and the last picture shows the case April twenty-fifth, 1922. The cleaning up of this case has resulted in a marked improvement in the health of the patient.

No. 16A. This case is shown to illustrate the healthy granulation of osseous tissue following an apicoectomy.

No. 17. Also shows result of apicoectomy. There is, however, a rather interesting case history in connection with this. Patient had suffered a severe attack of rheumatism which had increased in intensity for a period of two years. Beginning April 1st, 1920, she was in bed for seven weeks; for nine weeks following, was up one-half of each day. Case finally diagnosed as erythema nodosum. Characteristic gastric irritation and constipation prevailed. Tonsils removed July 10th, 1920. Rheumatism worse immediately after removal of tonsils. Teeth x-rayed and tested with Faradaic current, and those shown, found to be non-vital with large granuloma and considerable osteitis over right central. Considerable lymphatic involvement was noted, especially in the deep cervical and axillary chains. Root canals in both teeth were treated and filled. Root amputation and curettments were done. You will note the apparently healthy granulations that have taken place. Case showed continuous progress. Rheumatism and dermatitis cleared up and patient gained more than twenty pounds in weight. It is interesting to note that on May 1st, 1922, the patient experienced what she believed to be an acute attack of rheumatism. This attack was so entirely different from the previous attack as to eliminate it as being of infectious origin, in that it suddenly appeared in the muscles of the shoulders and gradually disappeared altogether after two weeks. There can be no doubt that the infected tonsils and infected teeth both played an important part in this case. It would also emphasize the importance of the necessity for a careful examination of the tonsils and their removal, if infected.

No. 18. You should not be led to believe that all cases result in success. Here is shown a series of pictures, the first of which shows an apparent granuloma and certainly incompletely filled root canals. Two years ago, the case was treated, root canals said to be filled and an apicoectomy done, following which the second picture was made. The results certainly were not satisfactory, and the tooth later removed and granuloma curetted. The tooth, a first bicuspid, proved to be a bi-rooted tooth, the palatine root having been treated and filled to the apex, the buccal root having been resected, naturally, unsatisfactory results.

No. 19. An attempted apicoectomy was done on this tooth without an attempt to treat and refill the root canal. This was proven clinically when the root canal was filled and an apicoectomy subsequently done.

No. 20. This is a case of peculiar interest in many ways, but the point of emphasis here is the root perforation into antrum. The first bicuspid root shows a complete destruction of the periosteum and floor of the antrum, whereas the second bicuspid plainly shows the periosteum intact and no perforation into the antrum. These facts were proven clinically. That a promiscuous perforation into the maxillary sinus is practiced, is regrettable, as was forcibly presented by Dr. Guy Harrison two years ago at Charlotte. It is to strongly condemn this practice at this time that this case is shown. Here too, is a case of a trained nurse being condemned to the tuberculosis sanatorium, whereas a rapid recuperation followed the cleaning up of all infected teeth, together with an extensive empyema of the antrum.

No. 21. In this series, nothing unusual in appearance is seen. The interesting feature being the tragic ending. Perhaps the unusual is manifest only in the rapidity of the fatal ending after the discovery of the dento-alveolitis and consequent lukomia. The infected non-vital teeth shown here were treated and filled more than fifteen years, and during that time had remained perfectly comfortable without even a trace of pericementitis. Suddenly a lower molar developed a more or less irritating pericementitis, and the patient complained of headache, indigestion, and a general feeling of malaise accompanied by temperature and increased pulse rate. But little pain was experienced. A general x-ray examination was made which revealed the granulomata shown in this series. The lower molar was at once removed and the infected area thoroughly curetted. The wound failed utterly to granulate new tissue. Blood counts were made from the start, showing marked leucocytosis, which increased rapidly, in fact the white blood cell count increased from 20,000 to more than 200,000, with marked soreness and enlargement of all lymphatic centers, especially the deep cervical chain. The patient was constantly under the care of physicians. Death resulted within three weeks from the discovery of the dento-alveolar infection. It would seem that this case emphasizes the importance of the responsibility of the dentist.

No. 22. Here is our old friend known as tic-doloureux. For twenty years, this poor victim had intermittently suffered from her so-called tic-doloureux, having had all sorts of operations resorted to from opening into each antrum through the palate processes of the superior maxillary bones and into the nasal cavity, to the injection of alcohol into the tr-facial nerve. The alcohol injection gave temporary relief. Acting upon the assumption that tic-doloureux, since it is an irritation along a nerve tract and not an

inflammation of the nerve tissue itself, is the result of an undetermined factor, the problem to be solved was to find the cause and remove it, hence the further injection of alcohol was refused. A careful and general examination was made. The pictures shown here are of the teeth found.

The upper jaw was found to contain no teeth nor roots, though the patient insisted that her pain was, and always had been, "all through" the upper jaw. The non-vital teeth and their co-incidental infections were cleaned up, with rather slow but positive relief, which has persisted for more than three years. One vital tooth was removed also, but no trace of pulp stones could be found. The six anterior teeth in the lower jaw are the only teeth remaining in the mouth.

No. 23. The first picture here has two important features. The tooth had been troublesome for some time, and was finally refilled under a local anæsthesia. Pain still persisted for some time, when the picture was made revealing two things: First, the presence of pulp stones, and second, the very close proximity of the filling to the pulp. Both these conditions were shown clinically. The second picture shows the presence of pulp stones which suddenly precipitated intense paroxysms of pain without having given any previous trouble.

No. 24. This case has a rather important history and is intended chiefly to show the importance of a correct focus and angulation in making a radiograph. The tooth had been extracted several years before, while the patient was under treatment for tuberculosis. After a lapse of some years, a discharge appeared from a sinus in the region shown. The first picture shown here was made and from it, the case was operated, but apparently without results; perhaps another operation followed, still without the desired result. At this point, the picture here was made and a tooth root definitely located. The root was removed in August, 1919, and again the case was seen in May, 1921, with no further evidence of infection to that date. It is significant to note that the patient entertained the opinion of a possible tubercular infection.

No. 24A. In the one picture, except upon extremely careful examination, no root remnant would be discovered, but in the second picture taken at the correct angle, the root remnant is plainly visible.

No. 24B. In the one we see apparently an infected root supporting a part of the bridge. The picture taken at the correct angle shows that the bridge had been placed over a root remaining in the jaw and that it had never been used as an abutment.

No. 25. The first picture here shows a neuritis, which was apparently caused by this little "lost province." The clearing up of this infection relieved the neuritis.

The second picture of the series shows another neuritis case. The

patient declined operation and no further report is available. It might be interesting to note that this root is the only tooth tissue in the mouth.

The third picture shows a part of a gutta percha root filling which had apparently been forced through the apex of a central. This was a source of irritation in the mouth of a neuresthetic patient.

No. 26. Here is shown a neuritis case in which operation was declined, therefore, a definite conclusion could not be arrived at. It might be interesting to note that no enlargement appeared either buccally or lingually in this region, which would lead one to suspect tissue of dental origin. This is the case referred to above.

No. 27. Here is an unusual case, due to the careless extraction of a temporary tooth. The premolar was extracted by a physician, and was followed by a severe infection which involved a considerable portion of the alveolar process adjacent to the extracted tooth. It was necessary to remove necrotic bone and process, including the second premolar and the undeveloped bicuspids. During the week from the extraction of the tooth to the operation, the child had reached an extremely critical condition, and upon presentation, an immediate operation was deemed imperative. The child had lost appetite, was unable to walk, and had temperature of 103°. The prognosis in this case was considered extremely doubtful at the time of the operation, and for three days afterward, when improvement began to show which finally resulted in recovery. Interest centers here upon the importance of sterilization, even in the extraction of so-called abscessed temporary teeth.

No. 28. It has often been observed that an area of infection may be present while not appearing in the picture. Such is the case shown here. A granuloma at the disto-palatine aspect of the bicuspid was found about the size of two peas placed side by side.

No. 29. It seems quite unlikely that a gutta percha root canal point could successfully be inserted so deeply into the alveolus as in the two cases shown here. The chief interest in these two cases is to show that not all of our efforts are crowned with success.

The whole series of cases, with explanatory interpretations, is shown in a feeble effort to stimulate a greater care in the study of each case presented to the general practitioner; to encourage a definite, careful and scientific technique in all operations, and a fixedness of purpose with an unswerving adherence thereto.

Haywood Building, Asheville, N. C., April, 1923.

President Sturgis:

Gentlemen, we have been much edified by Dr. Hunt's paper, is there any discussion?

Dr. C. B. Gifford, Norfolk, Va.:

I think the discussion in these papers was a very wise one.

They both cover the same field from different angles, one from oral and the other the minor infections we find in the mouth. Dr. Hunt has shown this very clearly and comprehensively, he shows the value of a careful survey of the mouth. He has also shown us the value, as most of us know, of the blood picture. You should have this picture made and by a proper technician. The whole thing gives us this one point, that we must have more recognition of standardization as to focal infection. Dr. Hunt has shown us tonight what the conditions are and preached propaganda and then another man in the same community says, "I have never seen anything in this thing of focal infection and arthritis." Where does that get us? We are running in a circle. We are doing ourselves injustice. When a man who is inclined to shrug his shoulders, he is hurting himself more than any one else. He is hurting his patient and hurting his practice. I thank Dr. Hunt.

Dr. A. O. James, Chatham, Va.:

As Dr. Gifford has just said, I believe it would be very good to have these two papers following one another. Dr. Harrison, gentlemen, stressed as an advantage one point, that is the value of making more than one radiogram film of a certain area. Very often a radiographic film really is not only misleading, but worse than no film at all. It will lead us to a conclusion that is absolutely untrue, as witness the film he showed us regarding the root under the bridge that from one angle had every appearance of being a normal abutment. We will find these same things. After making your survey, gentlemen, I think we will all find it to our advantage to make at least two films from different angles. Dr. Harrison preaches "Don't depend on your small dental film, make lateral posterior plates that will often uncover trouble that one, two, three or four films will not." I wish to thank Dr. Hunt, also, for giving his paper.

Dr. Harrison:

Dr. Hunt has presented so many interesting cases and so many interesting phases that one could [be] well devoted to. Dr. Hunt referred to Dr. Hoggan and myself as being specialists, I don't know whether he is complimenting me or not. He referred to cases that had not been referred. All of us are more or less specialists. We like to do certain things, or we

dislike to do certain other things and therefore unconsciously we are more or less specialists. I think the best definition of a specialist is this, a specialist sometimes is well qualified in his specialty, but also as a rule he is woefully ignorant outside of it. If he classified me under that heading I would come under it. I have enjoyed Dr. Hunt's paper very much. You know he is a clinician and of course that always appealed to me.

Dr. John N. Johnson, Goldsboro, N. C.:

Far be it from me to let an eminent gentleman of North Carolina read a paper without standing on my feet to say a few words in discussion. He has shown us the difference between every day clinician and specialist and that difference is only this: sometimes we clinicians who wade in average way of every day practice, find ourselves over our depth and then we seek the service of the specialist and they always do what they can to aid us and pull us out of the ditch. Of course, the only difference between specialist is that the specialist seeks out the details of a small matter and often stub their toes over big ones. Sometimes we find that if we do not have them we would be in bad shape because they check us up. Dr. Hunt has brought out the far reaching secrets of impaction and that is where the careful ground diagnosis comes into play. There are many things that arise from impacted teeth that the average clinician, be he of the medical or be he of the dental profession, may not comprehend. I have a number of cases and very recently I had a case that I brought up before the men in my town eminent in their line, that is, they are considered as specialists. I had a case of a girl I went to school with 23 years ago. She was totally blind in her right eye; at certain periods she suffered excruciating agony and nothing would relieve her but morphine and finally she developed the dope habit and took three different treatments in different sanitariums for the opium habit. Her husband was seeking every avenue that he could, he had carried her to Baltimore and Richmond and had her treated by four specialists in my town. The case was diagnosed as detached retina, but he brought her in to me and somebody suggested that she have x-ray picture made of her teeth and I found an impacted canine. I removed

it, a simple operation; cut through the bone and pried it out and did not expect anything from it. A few weeks afterward the husband came in and said she was able to distinguish her mother's face for the first time in ten years. Now, how in the dickens that happens I do not know. I just simply know that a good many specialists had stubbed their toe and did not discover the impacted tooth. I will be glad to show x-ray. It may be that if she had a detached retina I joggled her head around so that it dropped back into position. Some years ago Dr. Hunt and I were working on a young lady. He returned her to me and she raised the devil with me for two or three weeks and I could not get anything out of her. I sent her to Dr. Stiff in Richmond, and Dr. Hunt did all he could, and every time she has a symptom for five years she runs down to me to x-ray the tooth and it is perfectly all right, a beautiful operation. I want to compliment Dr. Hunt on his work and I want to say that an every day clinician in North Carolina, we haven't any real dental specialist in North Carolina, but we have got some mighty good men. We have got one case right now and after hearing Dr. Harrison's paper I am determined to send the patient to Richmond. I want to compliment both the gentlemen on the papers, I have enjoyed them hugely.

Dr. Hunt (closing discussion):

I do not think I have anything to say at all, except to thank the gentlemen for the very kind remarks they have made. Thank you.

President Sturgis:

We have heard some splendid things this evening and I believe we are fully repaid for our presence.

Adjourned 10:35 p.m.

TUESDAY MORNING, MAY 1ST, 1923

President, Dr. W. M. Sturgis, of Virginia State Dental Association, called the meeting to order at 9:50 a.m.

The President:

The first on the program this morning is a paper by Dr. Rudd that I think you will be interested in. Dr. Rudd has done a great deal of work along this line, has been for the past two years President of the Virginia Association and done a great

deal of work along that line too. The title of his paper is "Construction of Partial Dentures by an Indirect Method." Dr. Rudd.

Dr. M. B. Rudd, Richmond, Va.:

Mr. President and Fellow Practitioners: It is certainly a very great pleasure to come before you with a subject that I feel is a practical one, with a subject that is applicable to us who are general practitioners, especially, but should be of equal interest to those who are not general practitioners, especially our oral surgeons. I feel that partial denture is a branch of our work that has not been given the proper consideration and I shall not enter into a discussion of that feature, except simply to state that it is my opinion that the subject that I am to present to you is one that should be of equal interest. Bear in mind, of equal interest to every man who is practicing dentistry. The subject, as you have heard, is "Construction of Partial Dentures by an Indirect Method."

(Dr. Rudd then proceeded to read his paper.)

CONSTRUCTION OF PARTIAL DENTURES BY AN INDIRECT METHOD

BY M. B. RUDD, D.D.S., RICHMOND, VA.

The era of focal infection found the dental profession unprepared to meet the requirements in the field of partial denture construction. It was considered good practice by some to sacrifice normal teeth in order to supply full dentures. This was conscientiously done, for it was thought that a partial denture, at best, was only temporary. Let us hope that this phase of our practice will receive the consideration it merits, and that a better, more uniform and standardized technique may be adopted. My desire to see such a technique perfected prompts the presentation of this paper.

The principles employed in the past in the construction of partial dentures, both as to impression taking and the making of the many clasps and attachments, have failed to satisfactorily meet the requirements. The obvious requisites are proper mouth examination and preparation, accurate impressions, casts, bite, correct construction including the principles of stress-breaking and indirect retentions. These are indispensable factors to the success of partial dentures. While the essentials to be considered in this paper are applicable to dentures of gold or rubber, more consideration has

been given to the use of gold, as it is here that the more universal application of stress-breakers can be utilized.

MOUTH EXAMINATION AND PREPARATION

A very careful examination of the mouth should be made and recorded before beginning the construction of any case, however simple and routine it may appear. There are no two cases exactly alike, although the general principles involved may be approximately the same. These small differences should be noted and the designing done to meet the requirements.

The first procedure should be a digital examination of the teeth and tissues to judge the strength of the teeth and condition of the bony ridges and muscle attachments. Following this an x-ray examination should be made, including edentulous spaces, to verify the opinion reached by the ocular and digital examination and to clear the record as to periapical and pericemental involvement, noting carefully those teeth to which the clasps are to be attached. It is seldom necessary to grind but very slightly. Grinding should be done at the point where the rest seats on the tooth and never through the enamel. This to allow for space between the occluding teeth sufficient for strength of this part of the clasp.

Occasionally extreme contours will be found near the occlusal surfaces of the teeth and slight grinding will be helpful to prevent too strong a grip by the clasps. With the mesio-distal clasp, grinding becomes a necessity, often to a degree that may seem injurious, but then the emergency demands extreme measures. The teeth should be carefully cleaned. Attention should be given those teeth which will occlude with those to be supplied, and restoration made to conform to the normal. Those teeth that have moved downward or upward, as is often the case where the opposing tooth or teeth have been lost for a long period of time, should be made to conform as near as possible to what would be the normal. When they have moved to a degree often seen, in which the grinding surfaces approach the opposing jaw, they should be removed and replaced by whatever restoration is indicated since no denture will give service with such deformed occlusion. The edentulous part of the mouth should receive careful consideration and if bony prominences exist they should be treated surgically in order to insure a comfortable denture.

SECTIONAL IMPRESSIONS

Great difficulty has been experienced in obtaining accurate impressions simply and easily until recent years. The method originated by Dr. Alexander H. Paterson can be applied to any partial case and an accurate impression of the edentulous areas and the teeth be made. In February, 1920, I had the honor of attending Dr. Paterson's clinic, and since that time I have seen the advantage of applying his method of partial impression taking in bilateral

cases. In the February *Dental Cosmos* of 1922 Dr. Paterson describes this technique. However, in certain difficult cases, such as lowers with lingually tipped molars and those cases in which fixed bridge work makes the impression more difficult, it is necessary to add to his technique. The necessity for an accurate impression is apparent when it is understood that all castings are made from the cast, and upon the cast also the fittings are made. The case is then completed without again seeing the patient after the bite has been taken, except to verify the shades of the teeth.

The taking of the impression of difficult lowers referred to will be described briefly. Take an impression of each side with impression compound, using a partial tray. These trays should be

FIG. 1



FIG. 2



oiled slightly to prevent sticking. Remove the compound from the trays and cut away the buccal and labial parts of these impressions on a line through the center of the occlusal surfaces of the molars, along the crest of the ridge of the edentulous portion of the jaw, to the center of the occlusal surface of the bicuspid to the linguo-incisal angles of the anterior teeth.

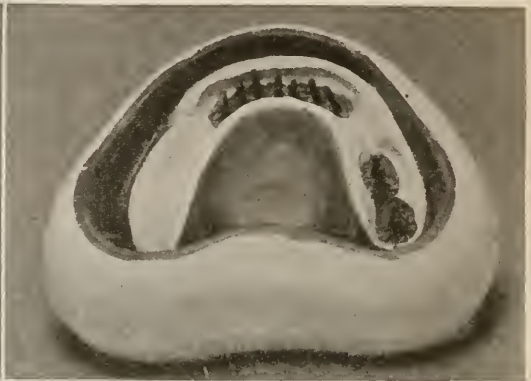
The compound trays should be cut off just short of the median line. Form the lingual side of these trays to a length and form desired for that portion of the denture, cutting away any bulk that would make them inconvenient to handle. The tops of these trays should be flat or beveled buccally and labially and slightly thickened. Fit the trays back into place and trim if needed to approximate a fit. Accuracy in this tray is not an essential, as the impression is taken in plaster. The trays should be scarified thoroughly in those portions where they come in contact with the teeth and the tissues to prevent the breaking of the plaster in removing. (Fig. 1.)

Having prepared the trays and fitted them, the plaster is mixed and, before it begins to stiffen, the tray is dipped into it and enough is added, as it begins to set but is still in a flowing state, to insure a sufficient amount for the impression; then they are one at a

FIG. 3



FIG. 4



time firmly seated. It is necessary to make a separate mix for each section. As soon as the plaster has set, remove the surplus from the buccal and labial surfaces of the teeth and trays and oil them with cocoa butter or any pleasant oil. The lingual plaster section

FIG. 5



FIG. 6



at the median line where the compound trays are beveled to receive it is carried to place, allowed to partially set and carved labially on a straight line with the compound trays. Each buccal section is placed, bringing them to the center of the cuspids, beveling distally

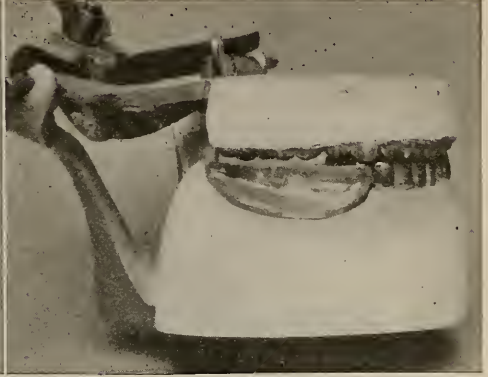
to receive the labial section. Again oil the plaster and teeth and make the labial section.

The removal of the six sections is a simple matter if care has been observed in the preparation. Remove first the labial section

FIG. 7



FIG. 8



by pulling the lip downward and lifting up on it. The same with the two buccal sections. By doing this in removing these sections breakage is almost entirely avoided. The all-plaster lingual section is next removed and then the two posterior lingual sections. (Fig.

FIG. 9



FIG. 10



2.) After these sections have been allowed to dry for a few minutes they are reassembled and fastened together with sticky wax. (Fig. 3.)

The majority of bilateral cases may be taken with one lingual

compound and plaster section. In those cases where fixed bridges obstruct the removal of the single lingual section, compound cores may be placed under them and the compound tray trimmed so that it will go to place before the impression is taken. No unusual skill is required to become proficient in the use of this method and results will more than compensate for the effort. The time necessary to take the most difficult impression will not exceed an hour and a quarter.

CASTS

The casts are made so as to maintain the accuracy obtained in the impression. They must be strong so that they will not fracture when the castings are fitted on them. The impressions should be boxed and varnished to the necks of the teeth and no farther. The

FIG. 11



FIG. 12



teeth are packed with copper amalgam. Other amalgams permit the mercury to rub off on the castings unless they are mixed very dry, which makes it difficult to have smooth teeth, and consumes too much time.

Metal posts, short nails or screws are inserted into the amalgam and allowed to project sufficiently far to be firmly held by the stone with which the body of the model is to be made. The surface of the amalgam at the necks of the teeth should be left rough. (Fig. 4.) Sufficient time should elapse to permit the amalgam to set before making the stone portion of the cast. The stone should be carried to place with a vibrator to insure uniformity, and allowed to harden thoroughly before separating. Figures 5 and 6 show the completion of the cast.

PLASTER BITE

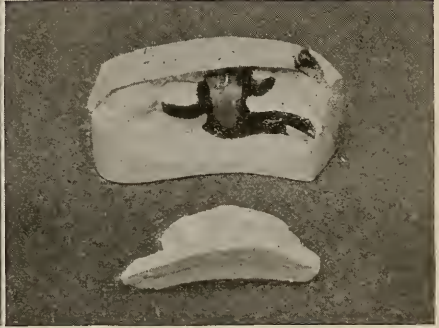
Assuming that we have secured a perfect impression and a perfect cast, any other than a bite that is an actual reproduction of the

occluding surfaces of the opposing teeth means guesswork in articulating the teeth supplied. Therefore, in order to maintain the degree of accuracy possible throughout, a plaster bite is taken. In the use of wax, resistance is encountered, often causing the patient to bite improperly, whereas with plaster this is obviated.

FIG. 13



FIG. 14

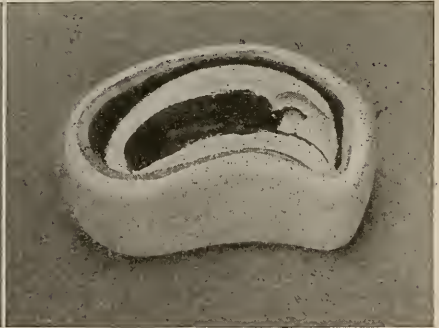


The bite is built on the model to approximate the shape desired and placed in the mouth to ascertain the necessity for further development. It should be cut slightly lower than contact with the occluding teeth in order to allow a slight thickness of plaster between the bite-plate and the cusps of the occluding teeth, since

FIG. 15



FIG. 16



the impression made by these teeth is to be packed with amalgam. (Figs. 7 and 8.)

The bite-plate is now replaced on the stone and amalgam cast and 4/1000 tin foil is placed over the occlusal surfaces of the bite-plate and teeth (Fig. 9) and a tray made of it by turning up the edges.

(Fig. 10.) This foil is carried over the teeth the same width as on the bite-plate. The foil should be fastened to the wax. Care should be taken to estimate the thickness of the plaster so that it does not flow beyond the contours of the occluding teeth. The teeth are

FIG. 17



FIG. 18



FIG. 19



FIG. 20



oiled and the bite taken. (Fig. 11.) The bite having been placed on the cast (Fig. 12), quick setting amalgam is packed into the impressions made by the occluding teeth, and in a few minutes the case can be articulated.

By the use of this bite and the making of the amalgam surfaces of the teeth, we not only obtain accuracy in getting the bite, but

there is no rubbing off or breaking of cusps in working against the occluding teeth.

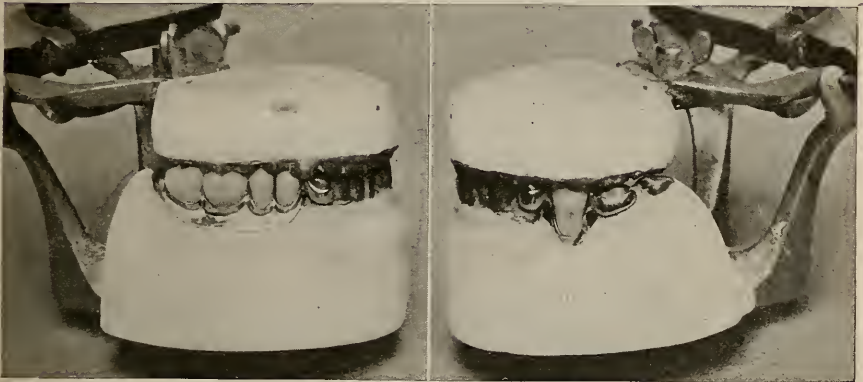
CONSTRUCTION

When construction in wax begins, the denture has been designed, since in the preparation of the mouth a general plan has been outlined and the preparation made accordingly. It is well, however, to wax more extensively than desired for the finished case and cut the shape, as originally planned, after the teeth are set up and waxed to place.

1st. The cast is oiled with cocoa butter dissolved in gasoline. Upon the evaporation of the gasoline the surfaces are sufficiently oily to prevent the sticking of the wax.

FIG. 21

FIG. 22



2d. Form the saddles and clasps with 22 to 24-gage casting wax. The wax should be thoroughly adapted since the models upon which the castings are to be poured directly upon the surfaces that engage the cast.

3d. The lingual bars and palatal plates or straps are designed and when the waxing is completed they should be thickened to about 12 and 16-gage respectively. The indirect retentions should be about 20-gage and the thickness of stress-breakers will be regulated by the type of stress-breakers used.

4th. Grind tube teeth at the necks to the shape of the ridge and to shorten for occlusion. They are selected slightly longer to allow for this grinding and should be hollowed slightly to allow some additional thickness of the wax at the point of union of the post and saddle. Bevel around the necks of the teeth and grind a V-shaped groove in the inter-proximal surfaces about two-thirds of their length to give them added strength and retention.

5th. Each tooth is oiled and the wax post fitted, allowing it to

project slightly beyond the opening. Touch this end with a hot spatula, also the saddle, and then seat. Build the wax around the necks of the teeth to form a shallow box, extending it up between the teeth, filling the grooves or V-shaped spaces. Now construct the stress-breakers and indirect retentions as required.

6th. Having completed the waxing and setting up we are ready

FIG. 23

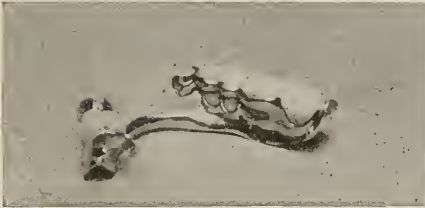


FIG. 24

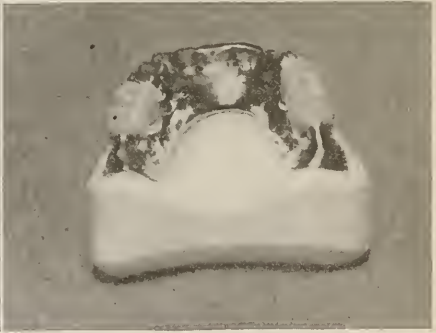


to develop the casting models. In bilateral construction cut the wax so as to make two or more castings. Take a sectional impression from the cast with plaster for each casting. The teeth should not be removed when the impression is taken, but when the two plaster sections have been separated they should be lifted off to allow flexibility of the wax in removing it from the cast. After the wax has been removed, replace the teeth on the wax saddle

FIG. 25



FIG. 26



and place it in one side of the impression and bring the other into position and gently burnish the wax to the impression. (Fig. 13.)

The same procedure is followed with the other sections. (Fig. 14.)

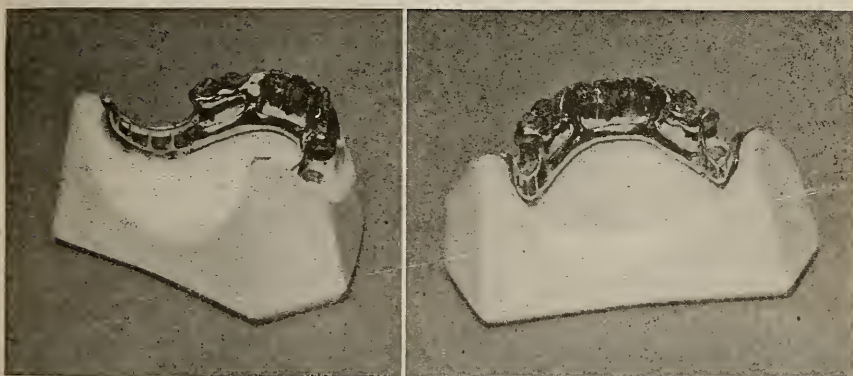
These are then boxed (Figs. 15 and 16) and poured in investment material. When hard the plaster sections are removed (Figs. 17 and 18), the teeth are taken from the model, the wax is cleaned with acetone, the case is flaked (Figs. 19 and 20) and cast.

7th. The castings are cleaned and immersed in acid, some polishing done with stones and fitted to the cast. Take an impression with all parts in place, remove the castings, place in the impression, invest and solder.

The completed denture is now fitted to the cast and whatever minor changes necessary are made so that, when it is polished and placed in the mouth, it will fit without grinding. (Figs. 21, 22, 23 and 24.) Ordinarily only contact is obtained. This, however, is not sufficient; and accurate occlusion is desired. This is accomplished as in full dentures by proper mouth grinding. The long cusps of the occluding teeth only are ground, and these very slightly, thereby causing no damage to the natural teeth.

FIG. 27

FIG. 28



STRESS-BREAKERS

In those partial dentures in which there are no posterior teeth and the saddles and clasps are cast together, any movement of the saddles produces a movement of the teeth. Unless stress-breakers are used to lessen this vibration the life of these teeth is very short. There are several methods by which this stress may be lessened. In some types of cases it can be almost entirely relieved. The object of a stress-breaker is to allow the saddles to give downward when force is applied and have enough spring to return to a position of rest when it is released. They should be made of a material containing both strength and flexibility. The same gold used in casting the appliance is used for the stress-breakers and they are developed and cast at the same time as the rest of the case. Four types of stress-breakers have been designed, one of which will be applicable to any case. In order to simplify the description we shall select four types of cases and apply the stress-breaker applicable to the particular case.

1. In an upper with the six anteriors present: Clasp the cuspids either bucco-lingually or mesio-distally. Extend the palatal part of the denture the same width of the lingual borders of the saddles and extend the indirect retentions on the lingual surfaces of the

FIG. 29

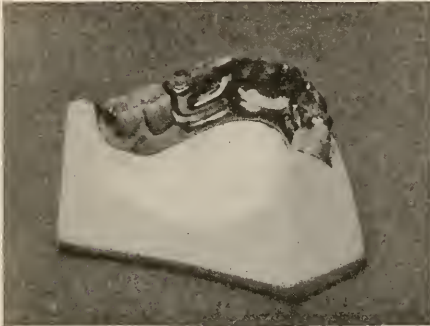


FIG. 30



teeth. When the teeth are set up and waxing completed, take a sharp instrument and cut the wax, so as to separate the saddles at the junction with the clasps, and extend the incision to the center of the palatal border of the saddles on a curved line and anteriorly

FIG. 31

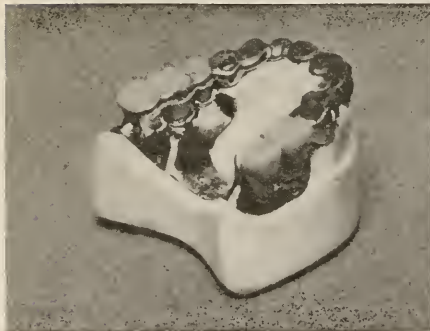
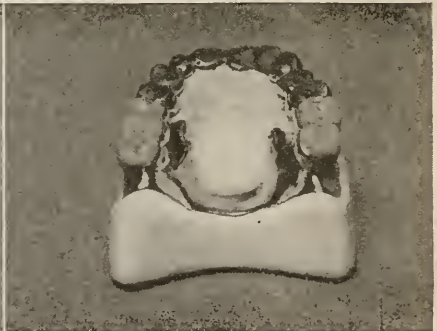


FIG. 32



to a point on a line with the disto-incisal angle of the centrals. This incision should be made so as to have the upper plate overlap the lower. When the castings are completed and soldered together in the center, the saddles will be allowed to give downward when pressure is applied, and return to a rest position without undue stress on the clasped teeth. (Figs. 25 and 26.)

2. In a lower with the molars only to be supplied: Clasp the second bicuspid. Extend the indirect retentions upward from the lingual bar on to the laterals. The stress-breakers are joined to the clasps and carried anteriorly along the lingual surface of the first bicuspid and cuspid and joined to the indirect retentions on the laterals. The saddles are not attached to the clasps. (Figs. 27 and 28.)

3. In a lower case with first bicuspid and the six anterior teeth the stress-breakers are developed differently from type 2 in that they are brought downward from the disto-lingual surfaces of the bicuspid, below the gingivæ if possible, and carried anteriorly along the alveolar ridge and attached to the indirect retentions. (Figs. 29 and 30.)

4. In a case of six anterior lowers present the stress-breakers consist of cast bars attached to the clasps and extending posteriorly along the lingual surfaces of the teeth of the denture and attached to the saddles at the disto-lingual surface of the first or second molars. This bar is formed to the teeth when developed in wax. It is shaped just as are the clasps and hugs each tooth in the same way. The saddles are not attached to the clasps. This type of stress-breaker is equally applicable to the upper cases. (Figs. 31 and 32.)

In concluding this description of partial denture construction by this method your attention is called to the following features:

1st. The minimum number of visits necessary for the patient and the short duration of each.

2d. The ability to plan and alter attachments, rests, retentions, saddles, etc., on the cast where all the surfaces can be seen and studied both before and after casting.

3d. The absolute assurance of the denture going to place, requiring a minimum of grinding and insuring comfort and service to the patient.

4th. The utility of stress-breakers and indirect retentions.

5th. Maintenance of accurate records including the permanent cast for changes, additions and repairs.

6th. Its universal adaptability to all partial cases regardless of the shape or position of the teeth.

7th. Its applicability for practitioners doing their own work and to those employing a technician.

502 METHODIST BLDG.

Dr. W. M. Sturgis, Warrenton, Va.:

Gentlemen, you have listened to a most interesting paper. I hope there will be discussion. Dr. Rudd has brought out some most interesting points and it is a subject in which everybody here is interested in. I hope you will not hesitate to ask Dr. Rudd questions.

Dr. William Pilcher, Petersburg, Va.:

I have been two or three times unfortunate enough not to hear Dr. Rudd's paper and last year I did not get a chance to see his clinic. The gentleman sitting next to me says it is the best paper he has heard. Dr. Rudd looks like he has found a way to make what is called an air-tight job. It is fine. I am quite sure that he has worked on it hard and it has taken a long time to perfect that technique. Some years ago a gentleman came over to Chicago when I was at the University of Chicago, and showed us how to take impressions. He came from Fayetteville, N. C., and his name was Hunter. Another man had a scheme driving at this same thing. He hadn't gone as far as that. In 1908 he came through our town. A year or so later I went to the national meeting in Louisville and found that old man's name being sung around there. That old man's name was Green. Dr. Rudd's work looks as though he has gotten something valuable.

Dr. Smoot, Charlotte, N. C.:

I would like to ask Dr. Rudd how long he would give that case of dentist's wife he showed on the screen?

Dr. M. B. Rudd, Richmond, Va.:

How long will they last? It is hard to say, but I can see no reason why they will not last.

A member:

How long do you call permanent? Five years?

Dr. Rudd:

They will last longer than five years.

A member:

You find no shrinkage of the gums?

Dr. Rudd:

No.

Dr. H. Wood Campbell, Suffolk, Va.:

A paper of this character should provoke considerable discussion from members of both societies. The paper as read by Dr. Rudd shows considerable research and considerable skill in techniques. All of us who have ever tried to take impressions in this way know the difficulty that surrounds it. In view of the fact that so many cases coming to us from time to time with a radiograph saying this tooth and that one and the other

one must be removed, this work, as outlined by Dr. Rudd, seems to be very timely. We had a paper from Dr. Anthony yesterday on "The Present Status of the Pulpless Tooth," and if I got the trend of his remarks, he came back to the very point he started from, that most of the dentine should be removed. I should think that word "dead tooth" is a misnomer and it ought not to be used. That is out of the way, however. It seems to me that fixed bridge work in many instances is not indicated, it is contra-indicated, especially where so much chipping, so much mutilation of the general outline of the mandible from extraction. It seems to me that this particular class of work should be more thoroughly stressed and that we should be more careful in learning the details of this construction. I am sure that Dr. Rudd will have a very interesting clinic. I have not had an opportunity to see his clinic, although I know him very well and for one reason or another have not been able to see his clinic. I am sure he is going to give you something that is very fine in every particular. I would like to hear considerable discussion of this paper. It is one which strikes every single man who is practicing dentistry. This is not a specialist paper, so to speak, but a paper that every man is more or less interested in and involved in, due to the fact that fixed bridge work is more or less condemned and pulpless teeth, so many of them, have to be removed.

Dr. Benjamin Bloxton, Richmond, Va.:

I am glad to hear this paper of Dr. Rudd's. I have been interested in this kind of work for some time. I am very much interested in the saving of normal teeth. I always believed in partial plates and have found them very deficient up to recent years. The main trouble is properly stressed on solid or rigid tissue and we cannot do it in the majority of cases, without stress protectors, but it is a little difficult to equalize that pressure. That is the most difficult part of it. I, from experience, find, with Dr. Rudd, that we can get impressions of any cases. The most trouble I find with this work is getting the patient to take care of the teeth that these casts are put on. We have erosion and decay under all these clasps. It is not fault of construction, but it is a condition we have got to meet. We have got to be very particular to warn our patients along that

line. These cast clasps have not been used long enough for us to get very much trouble along that line. I am mighty glad to have heard Dr. Rudd's paper and I think it is a very fine paper. As to the durability, it reminds me of my automobile, as soon as you get it you start working on it. So with these patients with these plates, we start working on them as soon as they get the plates, so there is continuous trouble, nothing is permanent. That is natural.

President Sturgis:

There are with us some of our invited essayists. We will be very glad to hear from them if they have anything to say on this line. Dr. Giffen?

Dr. William A. Giffen, Detroit, Mich.:

I saw the President looking at me and I am glad to take the opportunity of congratulating Dr. Rudd on the able presentation of this subject. I would hate to criticize such an able presentation of this subject. Dr. Rudd has shown you the accuracy of the technical procedure he has followed and undoubtedly is getting good results. Some of the principles that we might have a discussion on, but I don't see the advantage of it at this time. I believe thoroughly in the application of compensating attachments. There is one thing, however, about partial dentures that is that you cannot divide, or equalize, the stress upon the fixed natural teeth that remain and upon the mucosa. One or the other must carry the load. In partial denture construction it is necessary to have the mucosa carry the load and have the conditions remain for any considerable length of time. I, personally, am opposed to gold saddles. I believe that partial denture work is a more or less temporary arrangement, that it requires adjustment from time to time, certain tissue changes take place under these saddles over which we have no control no matter how accurately the work is performed, and I have never been able, even in the most favorable cases, with all the accuracy, to maintain occlusion as it should be maintained for a number of years. Now then, what must we do? You must have something to restore that occlusion. Of course, there are favorable cases where absorption has taken place, where you have a good foundation for your saddles, where they will last and give good service for a length of time. Most

of these cases we take check on resisting from cases and set them up in central occlusion on your articulator, you will find you have no contact between portions carrying and artificial teeth. I heard a very prominent partial denture man make a statement last month. He was asked how he reproduced his occlusion with this cast basis. "Why," he said, "I retain that occlusion, I can prove it by cases that have stood up for twelve years." He said, "The answer is accuracy in the technical procedure." Don't you have tissue change, Doctor? He said, "There may be some in cases where the extraction has been recently performed." He was using fixed cast clasp as attachments, with no compensating provision at all. "Now," he said, "it is an orthodontic proposition, if there is any settlement of tissues the teeth set up compensating by retruding into their sockets." However, he got into pretty deep water. He was allowed to get away with it. I cannot say there is very much settlement of sixth lingual. In lower bar case it has been my experience we have more or less settlement over a period of time. I do think there ought to be some way of restoring that occlusion. That is a complicated situation and something beyond the reach of the majority of our patients. Regarding the erosion, or decalcification, or destruction of enamel under cast clasps, this is an empirical statement on my part, but I have noticed this: it was called to my attention by a young man assisting me in my office for a number of years and he made this statement, "I wonder why it is you don't have decay or destruction of enamel under your clasps." Now I use, excepting in very exceptional cases, vulcanite saddle for my restoration and when occlusion is lost restore it by rebasing saddle. You can use gold surface. Here was a question he raised. I do not know whether there is anything in it, but there is room for research to be done on it. We do know that many of these cast clasp restorations on gold bases, bridges, for instance, where there is a vital tooth at their end, an abutment, that we do have, unless prophylaxis is carried out, destruction of enamel in a great many cases. He offered the solution that there is an electrolytic current of some kind passing from one tooth to another to the gold, and that probably has something to do with the pathology of destroying enamel. On the other hand,

if insulated in that vulcanite it does not get that current. It seems reasonable. I do know in cases where you have an abutment insulated in vulcanite I do not believe you have the amount of destruction of enamel under the clasp. So that while this is very beautiful work, and if there is a provision to restore the occlusion that would be the only question that I would raise. Of course we have not seen. Another thing, with these long compensating abutments, the question arises whether or not to have sufficient amount of strength they would not be so light and you would have a number of fractures of gold, because we know it is not possible to have our casting made so that there are no flaws in the metal and I have used all my compensating attachments out of the elastic gold wire. It works nicely in soldering, is fine, and the work is really fine. In order to get strength in long attachments it would seem that there would be rather too much bulk when you run the attachment so long in the lingual surface and bicuspid. That is one of the difficulties we have in impinging on the surface of the tongue. There is this much about it, I have never been able to attain that degree of accuracy in my prosthesis work where I can control the tissue stress in these partial denture cases.

President Sturgis:

Thank you, Dr. Giffen, for your remarks.

Dr. H. W. Walters, Warrenton, N. C.:

I listened to Dr. Rudd's paper, watched the slides and have watched the case with very great care and interest and feel that I have learned something worth while and I want to heartily thank Dr. Rudd for this presentation. I want to take issue with two eminent gentlemen here. My friend over there wants to know something about the permanency of this work, how long is it going to last, he speaks of structural changes under the gold saddles. He says he is opposed to gold saddles; although my business is looking down the mouth, I am opposed to tooth decay and I am opposed to a great many of the ills that overcome the human race, but we have got to do something to restore loose tissues and what we are after is permanency, of course, but there is nothing *permanent* under the sun, absolutely nothing, and when my patients ask how long is this piece of work going to last, I give them to understand that I don't

know. I shut them up by saying that God Almighty gave them two sets of teeth and didn't guarantee either one of them. I am not any smarter than God Almighty. Sometimes we do things that last longer than things done in Nature. The working up and down may cause cracking of the gold. Of course it may be then we have a job to repair. Be that as it may be, Dr. Rudd is doing a work that does stand. It reminds me of a case in my home town, we had a military company there, the captain of the company was very rough with his men, but they all loved him. He was very positive. He had a green, gawky country boy—it was a long time ago—and he gave the order to reverse arms and this fellow swung his gun wrongly and the captain said, "What is the matter with you, Henderson?" The boy replied, "I can't do it like he is doing it," but he is doing it and I have gotten some points out of his paper this morning that are going to be valuable to me and I am very proud of him and appreciate it very much.

Dr. L. D. Sayre, Chicago:

I wish to compliment Dr. Rudd upon the presentation that he has made in his paper. In regard to the building of these casts, I think a great many of them have been overcome by manufacturers of gold on the market, we can have light casting and yet very strong. The decay that takes place under cast clasps on teeth has been gone into by a great number in research way. We find erosion and decay under cast clasp that we do not find under a swaged clasp. That was taken up by the American Institute three years ago and they came to the conclusion that we cast our clasps more. The last man, Dr. Roach, teaches to cast clasps over an investment model of tooth. In this model are silicates, we make up the investment material and gold is brought up to such a high temperature that the silicate unites, giving hard glass-like surface outside. The inside of our clasp is not supposed to be touched. The inside is supposed not to require any grinding. I think the idea of stress breaking is fine. I have seen considerable done in the mouth. While I do not agree that partial denture work is permanent, I feel it is sufficiently permanent to keep working in the direction Dr. Rudd is working and do as much for our patients as in cases where finest bridge work is contra-indicated, where it

is impossible and where there are a considerable number of teeth in good shape that should not be removed. I think Dr. Rudd is to be congratulated by all of us on the work that he is doing.

Dr. John Bell Williams, Richmond, Va.:

I think we are going to have some meeting! Somebody gets up from Virginia—and there are a great many from Virginia—and compliments are passed. Though the President of the American, or National, has to disagree, I want to congratulate him upon that as he has brought forth difference of opinion, because it is that type of discussion that makes papers really valuable. He disagreed with Dr. Rudd and he is a full denture man. The indirect method is that he takes sectional impressions of the mouth and he then takes another separate sectional impression of his case to get off model. I think you are going to see a clinic that he is going to give tomorrow that will show the mysteries. I want, however, to compliment Dr. Rudd and state to North Carolina and Virginia that Dr. Rudd has been asked to allow this clinic to be shown in London and in Paris, I think.

Dr. J. A. McClung, Winston-Salem, N. C.:

I have been thinking for a long while that we have not given enough attention to this subject. I am sure that every one of us got a great deal out of Dr. Rudd's paper. I wish to thank him for it.

Dr. Rudd (closing discussion):

Gentlemen, I am very glad of one thing, that we have started something any way, and that is interesting always. I have been asked the question how long will the teeth last, referring to the decay we see shown on the screen. I, of course, don't know. The teeth were perfectly rigid, strong teeth and the health of the mouth was excellent. I have every reason to believe that she will get splendid service from this cast. In her case she has a very strangely constructed lower jaw, she has a cross bite and I would certainly be very loath to attempt to put full lower construction in her mouth. That is a very natural question—how long will these casts last? We don't know. We will do the best we can. Keep mouth in healthy condition and when finally, as last resort, we have to use a crutch, we will have to come to

the full denture. We have stabilators in natural teeth that Nature has helped us with in order to give patient as much help as possible. I think, however, that breaking of the stress, which is only partial, we all know that, we cannot completely break stress in the mouth. We can do so partially and any help is that much in the direction of what we are seeking. Dr. Campbell mentioned a while ago, just briefly, fixed bridge work. Now don't forget that in my opinion certainly that there is a place for fixed bridge work. It may be of the movable type. I don't think for one moment that fixed bridge work has the field just as certain and sure as our removable dentures and removable bridge work. There are three fields to be considered: fixed bridge work, the partial fixed work and the removable bridge work and partial dentures. Certainly we must keep these casts clean. Patients must be advised when placed in the mouth and look them straight in the eye, "I want to talk to you, you have something here, the best I can do for you, and it entirely depends upon you from now on if you want this as permanent as you want it to be, you have got to keep these teeth to which clasps are fastened, and in fact the whole mouth, cleaner than ever before." If they are not advised along that line they will have trouble very much more quickly. There is another thing that has not been stressed, that is leave only such teeth as you want to make attachments firm, in good condition. Don't place construction of any sort on a tooth that is movable to start with. Get a good condition of the mouth. You better remove them all than place partial denture in a mouth with a lot of pyorrheal teeth. That is an essential. It almost goes without saying. We frequently listen to patient—"Please don't take this tooth out." Don't you go ahead and listen to patient, but do what is best for patient. If they do not want to accept your opinion in the matter, let them go to some one else and probably they will not enjoy themselves very much when these cases come back to them. Dr. Giffen is absolutely right in his statement in regard to certain features of this work. We know these casts will eventually do what we call settle. They are going to do, some of them. There is one thing I have done in the matter of partial denture, I never put that partial denture in place absolutely with all the teeth in absolute articula-

tion the first day that cast is put in place. I would leave just a little more pressure on my partial denture when first placed in the mouth than on natural teeth. Allow that patient to wear two or three days and come back and to get swing of normal in working out of planes of these supply teeth. Then you know and you can say that your case is thoroughly settled. He refers to rebasing rubber dentures, there is just this I want to say: I agree with him heartily, I have rebased many of them. I was at that time using fixed attachments to my cast saddle and cast clasp in all these cases as the pressure forced downward on tissues and bony ridges and remains there, the tooth goes backward with it and the saddle remains thoroughly seated on that ridge. If you have a stress-breaker when pressure is applied all that cast gives downward is the thickness of that tissue. So when the case is removed the cast comes back to normal rest. I advise patients to take cast out at night to give the mouth a whole night of rest and if there has been settling they have some little opportunity for restoring circulation and partial resumption of original position. However, in the question of stress applied in stress bite, referred to by Dr. Giffen, when your cast has been sufficiently relieved and when you are getting elastic surface there, why as a rule the patient does not come back. You don't have them come back. They are satisfied with it. When you can get patient back, take your bite, register the difference, soak these teeth off and do as he says. You get same old processes of your teeth, go to supply house and grind additional teeth and restore your articulation. That can be done and that is the best we can do in this type of construction. In rebasing we have our difficulties there as well as you will have in this cast. Now I have only thanks for the gentlemen for the kindness and consideration they have shown. It is to my mind one of the prominent subjects to be discussed not only locally, but nationally. This paper has been prepared and I have brought this clinic here with the hope that we might get somewhere with partial denture construction. It is not perfect. There is no system that is perfect. It is as near as I can make it now. I have changed every year in some subject of this work for a number of years. I hope to change every year from now on as long as I practice. I was 41 my last birthday and

I hope to be practicing several years yet. This man from Chicago, they have lived wires from Chicago and Detroit that we have in the country, Dr. Giffen and Dr. Roach, and they have given new, valuable help and I hope that new spirit will be thrown into this partial denture work and in a few years we will have something that we can see that is suitable, we can stand on that platform. There is one suggestion made by Dr. Giffen, it is a splendid thing to consider. Dr. Sayre, of Chicago, has answered that very nicely. If you can see these specimens you will find there is no more bulk in this cast than in the rubber construction and I don't think there is anything like so much to stress-breakers in cast referred to that runs posteriorly along these bicuspid and molars, is just as smooth and nice and no bulk. That material I am using allow and it is very strong. I have never seen one of them break. All right, admitting now that it breaks, I have that patient's mouth in my file. I can take that cast back to that metal cast, I can place on cast, take my teeth off, sulphuric or nitric, soak cement off, place back on cast, take impression and put just a little dot of salt and it will not take temperature out of metal. You have had a small expense. I wish to thank you again and I trust we will get somewhere in partial denture construction very shortly.

President Sturgis:

The next on the program is, I think, somewhat along the same line—"Present Trend of Crown and Bridge Work, with Special Attention to Conservation of Pulp." We have the honor of having Dr. Loren D. Sayre, of Chicago, Instructor in Prosthetics and in charge of the Crown and Bridge Department, School of Dentistry, Northwestern University.

Dr. Loren D. Sayre, Chicago, Ill.:

Mr. President and Members of the North Carolina and Virginia State Dental Societies, Ladies and Gentlemen:

(Dr. Sayre then read his paper.)

PRESENT TREND OF CROWN AND BRIDGEWORK, WITH
SPECIAL ATTENTION TO CONSERVATION
OF PULPS

BY LOREN D. SAYRE, D.D.S., CHICAGO, ILL.

*Instructor in Prosthetics and in Charge of the Crown and Bridge
Department, School of Dentistry, Northwestern University*

Since the successful advent of the x-ray with its use as applied to dentistry, our views have changed perceptibly in regard to the placing of fixed bridgework in the mouth, both in the size of our bridges and in the condition of the teeth and roots of teeth used as piers and abutments. The evidence secured by means of the x-ray has resulted in much agitation and discussion of the former methods of restoring lost organs of mastication by bridgework.

With the possible exception of root-canal work no part of dentistry has received so much destructive criticism as crown and bridge-work in recent years and, because of the poor technique, has been justly criticized not only by dentists but by physicians as well. The lodgment of food and débris under and around poorly fitting crowns and bridges and the wholesale devitalization of pulps with its attending evil soon become a menace to the health of the patient.

These conditions do not apply of course to all crowns and bridges, and special attention should be called to some of the excellent technique used in the work done by individual operators, for all of us have seen crowns and bridges in the mouths of our patients which have rendered excellent service over a period of twenty years or more, and at the present time the x-ray and clinical examination show them to be in very good condition after all these years of service. Much time has been devoted by dental conventions, national, state and local societies to the teaching of better technique and disseminating new ideas, and this has proved to be one of the best ways of elevating the standards of this class of work.

Chief among the most prominent changes made in crown and bridgework has been an endeavor to conserve vital pulps in teeth, the x-ray having shown us the existing apical infections in such a large percentage of non-vital or pulpless teeth. Considering these conditions in relation to the work done in focal infection, whether the part played by pulpless teeth is under-emphasized or over-emphasized, in all justice to ourselves and our patients it is our duty to conserve the pulp, if at all possible, in the preparation of abutments and piers for our bridges.

The conditions just mentioned have spurred the dentist to a greater effort in developing new systems and devices in bridgework

attachments including movable as well as fixed bridgework. (I might add here that it is not the essayist's intention of discussing pro and con. the merits or shortcomings of either type, and it is needless to say that both are indicated under certain conditions and should be so used.)

These conditions have not alone affected the bridge and crown worker but have started a great number of our best men to do much original research work in regard to root-canal work; and regardless of this we still have infected apices of roots in too great a number and a variety of methods of treating pulpless and pathologic roots, resulting in many cases in indifferent success. In spite of this there has been no conclusive evidence that would demand the extraction of all pulpless teeth nor require the abandonment of root-canal work.

Ten years ago we were devitalizing the pulps of the anterior teeth to use dowel crowns for bridge abutments or replacing a decayed tooth with a porcelain crown with a dowel; the pulps of the posterior teeth were devitalized with arsenical preparations, and gold shell crowns placed on them, either to preserve the tooth individually or to utilize it as a bridge abutment; and many of our best men taught that a properly fitting gold shell crown could not and should never be placed on a vital bicuspid or molar.

What is our procedure today in these cases of the teeth used as bridge abutments or as individually restoring the decayed or broken-down tooth structure? In the case of a decayed or broken-down anterior tooth, to restore its contour, we use the porcelain jacket crown, not new by any means but being recognized as indispensable by more of our careful operators every day, and the skilled operator reproduces nature in contour and color to a very high degree, while at the same time conserving and protecting the pulp of the tooth as well as protecting the soft tissues surrounding the root.

KINDS OF BRIDGE ABUTMENTS

In bridge abutments there are a number of methods employed that can be used upon vital teeth, the old Carmichael attachment, the Tinker attachment, which is a modified form of the Carmichael, the mesio-disto-occlusal, the disto-occlusal and mesio-occlusal inlays, various types of pin inlays on the six anterior teeth, the cast gold shoulder crown, and cast clasps of various types. Surely from among such a number of proven successful attachments for abutment teeth we should be able to select something to fit each individual case without resorting to the devitalization of healthy, normal pulps for the purpose of placing Richmond crowns and post inlays. Most of these attachments call for a high degree of skill on the part of the operator in making the proper and necessary preparation, especially obtaining parallelism of the cavity walls so there will be no divergence or convergence of the preparations on

the abutment teeth to cause a failure in the cementation of our finished bridge. This in a great measure can be overcome by the use of a lug or spur and slot at one end; that is, the pontics may be soldered to one abutment only, and a spur from the pontics or bridge proper allowed to rest in a groove cut in the occlusal surface of the other abutment, or to protect the occlusal markings of the abutment a round hole of 12 or 14-gage may be cut into the distal or mesial surface, whichever the case may be, in the region of the contact point and the spur allowed to rest in this, the spur being clasp metal wire of proper gage to render sufficient strength, and either cast or soldered into the body of the pontics.

The advantages of the spur in bridges are threefold: First, it allows the normal movement of each tooth in its socket, a requirement that has received considerable attention of late years; second, it allows our abutment cavities to be cut at different angles, doing away with the more or less guesswork of abutment preparations paralleled; and, third, the danger of loosening abutments by torsion is considerably lessened.

With all of these advantageous conditions to work with, have we any moral right to devitalize the pulps of teeth, normal and healthy, for the purpose of placing a bridge abutment upon them? And do we not increase our percentage of failures by devitalizing the pulps of teeth for use as abutments in view of the enormous percentage of failure in the present methods of root-canal work, there being no question but that a tooth with a vital pulp can and will do more work and support more strain than a pulpless tooth. With these conditions before us, we find it is not necessary to devitalize teeth to place porcelain and dowel crowns, gold shell, swaged or cast, or to avoid pain in a cavity or root preparation where the pulp is not actually exposed but would be endangered if the softened dentin were removed, as we can use novocain solution and judgment based upon our knowledge of dental anatomy in preparing these teeth for crowns and inlays.

However, the use of pulpless teeth is surely not condemned for use in crown and bridgework; there are countless numbers of pulpless teeth serving satisfactorily, individually and as units in bridges, that have been serving over a period of years, and it would have been more than poor judgment to have sacrificed these pulpless teeth merely because of the fact that they were pulpless. The x-ray has been the one big light in guiding our judgment in the use of pulpless teeth, and the use of a pulpless tooth should never be attempted without a radiographic examination, this being as important as clinical examination of the tooth or more so, for while clinical examination may show the tooth and surrounding tissue apparently normal, the radiogram may disclose any one of a number of conditions that might contraindicate the use of the tooth.

FAILURE OF BRIDGE ABUTMENTS

In the 1920 issues of *Dental Items of Interest*, Dr. Ottolengui of New York wrote several articles on a radiographic survey of the field of fixed bridgework, using films of 62 fixed bridges with a total of 98 teeth used as abutments. Of these 62 bridges radiographed he reports that 59, or 95 per cent, had failed after having been set for various lengths of time by operators in various localities. The number of abutments found diseased was 76; the number of pulps in abutment teeth alive when bridges were set was 54; the number of these found diseased at time of examination was 38. The number of pulpless teeth used as abutments where bridges were set was 44, and the number of abutments (both those with vital pulps and devitalized pulps when bridges were set) which were found diseased was 76. So we can easily see, if his statistics are correct (and I have not the slightest doubt of them) there has been something the matter with our crown and bridgework to produce such a great percentage of failures. These are not all pulpless teeth that have caused these failures either.

What then has been the cause of these failures of bridges, which no doubt were set in all honesty of purpose and with the belief on the part of the operator and patient that a real and reasonably permanent operation had been performed, only to result sooner or later in a failure with the consequent loss of some or all of the abutment teeth and the bridge?

Has it been the fault of our technique or judgment, both in regard to the construction of the bridge and the indication of that particular type bridge for the particular case involved? Or has it been our lack of knowledge of just what to expect of living tissue with the added burden it will be subjected to in the replacement of the lost teeth? Or has it been lack of thoroughness in our examination of the prospective abutment teeth, both the portions above and below the gingival line, and the adjacent soft tissue which will be involved, and last but not least the occlusion of the opposing teeth, both in regard to force of bite and directions of forces exerted?

There are so many sources of failures that unless we examine our cases systematically and plan them in accordance with our examination findings, we are going to be hopelessly confused and at best can expect only a partial success in the completed work, and too often the patient will be almost as well off without the product of our effort as with it, for it is very easy in trying to eradicate one bad condition to replace it with a new one almost or quite as harmful.

What then is the proper procedure in examining, planning and constructing a bridge, either of the fixed or removable type, in any and all cases?

Our first step, and one of the most important ones, is the radio-

graphing, not only of the area we are to work upon but of the roots and crowns of the teeth of the whole mouth, for very often we find the most unexpected conditions, among which are periapical infections, cysts, improperly filled and unfilled root canals, perforated roots, resorption of the process, obscure gingival pockets, impacted and unerupted teeth, serumal calculus, curved and malformed roots, contra-indicating treatment, conditions of the periodontal membrane denoting occlusal trauma and a host of other conditions the bridgeworker must understand and be able to diagnose correctly.

STUDY MODELS

Ordinarily a modeling compound impression of both upper and lower jaws, run in plaster and with the aid of a thin wax bite, mounted upon an articulator capable of giving us lateral motion, will suffice. We are now in a position to examine the teeth under all the movements of the mandible, the relation of the upper to the lower in closing both on the lingual and buccal aspect, and not be limited by the interference of the cheeks, lips or tongue. We can find out at this time whether our patient is really capable of lateral movement, or whether there is one or a number of cusps or malposed teeth locking the teeth in a straight up and down bite. And at this time with the use of carbon paper these spots can be located enabling us later on to reduce, with a fine grit mounted stone and fine disks, these high areas which defeat our lateral movement. Conditions of this kind have a tremendous bearing upon the condition of the gums and periodontal membrane, and, I am sure, are not considered seriously enough by a great many practitioners and little understood by many others. We are, by the aid of our study models better able to note the positions and inclinations of the teeth in the arch, which is an important factor in determining the type of abutments we shall use, for frequently when the alignment and inclination of the teeth seem normal in the mouth examination, the study models will disclose them inclined so badly that it would be impossible to construct a perfectly seating bridge. We shall also be able to determine at this time whether it should be a fixed or removable appliance, for as has been stated there are indications for both such bridges.

We are now ready to make the oral examination upon our patient, using both the x-ray films and study casts to check up with. In the mouth we examine first (1) the mucosa for systemic and local pathological lesions, (2) next the condition of the gums at the gingival, (3) the presence of serumal or salivary calculus deposits, (4) the presence of pockets, their location, depth and cause, and (5) the decayed areas, (6) pulp vitality, by testing with the faradic pulp tester any suspicious tooth which the x-ray films and oral examination give us reason to doubt, and (7), finally, the patient's habits as to prophylaxis and sanitation of the mouth and the results of such treatment. This latter is very important because

certain types of bridgework can be placed in the mouth of a person who keeps his mouth in a scrupulously clean condition, with perfect safety, while if the same were placed in the mouth of another patient who had paid little or no attention to mouth hygiene, it would soon prove a failure and reflect upon the judgment of the operator.

After all of these conditions having been noted and recorded upon the chart, including of course whatever extraction is indicated to clear up pathological conditions, we are now ready with the information at hand to determine the type of bridge we are to use, fixed or removable, what teeth we are to use for abutments and piers, if any, and the type of abutment attachment that is best suited to the case. These are selected from the list before mentioned, keeping always in mind the conservation of the vitality of the pulp, whether we are to use a proximo-occlusal inlay, a three-quarter crown, a gold-shell crown, a Carmichael or a disto-lingual inlay on the six anterior teeth for the accommodation of the spur. All of these are definitely indicated in the various positions in relationship to the force and direction of force to which they will be subjected.

We can at this time determine the type of pontics we are to use. If for a fixed bridge, it may be one of three types. It may be of the sanitary type (merely the occlusal surfaces with sufficient space between it and the gum to be self-cleansing), this of course referring only to restorations on the lower jaw replacing the molars or bicuspids; it may be of the convex lingual type; or we may carry out the full lingual contour of the crown and root allowing it to rest against the gum tissue. All of this must be planned with the idea of mouth sanitation in mind, the finished product must be as near self-cleansing as possible and capable of being thoroughly cleansed by the patient with brush and silk floss; otherwise we are merely storing up future trouble for our patient by affording a breeding place for bacteria and a fermenting place for food and débris while the patient is ignorant of the real condition and the cause of the subsequent failure of the restoration.

In abutment pieces it seems hardly necessary to refer to cavity margins or the periphery of bands. Since Dr. G. V. Black laid down the doctrine of "extension for prevention," I think dentists appreciate the importance of it and follow it, at least, in spirit if not in practice. The margins must be more than self-cleansing, however; we must terminate the margins on the occlusal surface so as to protect the remaining tooth structure from possible fracture during mastication, for inlays do not strengthen teeth unless the occlusal surface is protected. How many of us have had the bitter experience of having either a portion of the buccal or lingual wall of a molar or bicuspid tooth carrying a mesio-occlusal-distal inlay fracture, and oftentimes result in an exposure of an otherwise

healthy pulp. So let us protect the occlusal surfaces as well as carry margins to self-cleansing areas.

In cavity preparation there is just a point or two to bring out. All those who have been taught the Black cavity preparation technique realize the value of flat seats, definite angles and walls from the retentive standpoint. In the Carmichael and three-quarter crown preparation the margins must be carried out to self-cleansing areas; definite shoulders at the gingival margins must be made against which to finish the inlay (although some operators prefer to finish the gingival down to an overlapping feather-edge such as a gold shell crown); and the grooves must be sharp and definite to get the maximum amount of retention. With any of these abutment pieces there cannot be too much emphasis laid upon the importance of the restoration of the contact point if there be approximating teeth. The x-ray films will show us to what an extent most men have gone to restore the normal contact and the result, either good or bad, to prove our contention.

INDICATIONS FOR THE REMOVABLE BRIDGE

If a removable bridge is to be used in these cases, the same care must be exercised in the abutment preparation. There must be favorable gum conditions and usually a sufficiently open bite to allow for the saddle as well as the teeth. Especially are these indicated where there has been a considerable loss of process, due either to resorption or extraction; in these cases the lost contour of the process can be restored lingually as well as buccally, resulting in a more natural feeling to the tongue of the patient. There are so many attachments of the frictional type used in this work that it is needless to mention them. Although a very high degree of skill is necessary along with especially devised instruments to secure absolute parallelism of the attachments to avoid binding or springing in placing the bridge in position, any of these attachments in the hands of a skilful workman produce very satisfactory results. The time involved in the construction is necessarily longer than in making most fixed bridges. The tooth structure of the abutment teeth must necessarily be sacrificed to a greater extent than in fixed bridgework to accommodate the attachment. However, as I have stated, there are beautiful and very serviceable removable bridges being made by the best operators in cases where fixed bridgework is very strongly contra-indicated.

Another type of removable bridge that causes the least danger to the pulp is the cast clasp bridge developed to a great extent by Dr. Roach of Chicago. This bridge, many men are of the opinion, is the ideal in a great number of cases, owing to the comparatively easy technique of construction and the lack of tooth mutilation in cavity preparation and, along with this, the removable feature in regard to mouth hygiene. The technique used, as before stated, is very simple. In constructing these cases, a plaster impression of

the area to be restored, including perfect impressions of the teeth to be clasped, a wax bite, and modeling compound impression of the opposing teeth are all that are necessary; these of course are taken after the teeth to be clasped have been prepared by trimming off any irregularities or too great a convex surface, to allow for proper placement of clasps. The tooth surface must be polished before the impression is taken.

After impressions have been taken, the plaster impression is run in cast clasp investment and the compound impression is run in plaster. These are separated and mounted upon a lateral movement articulator and the areas to be covered are outlined upon the investment cast with indelible pencil. This includes the clasps and saddle. Next, the Ash tube teeth, or whatever teeth we decide to use, are ground in, allowing a thin space for the saddle, and ground to perfect articulation. All ground surfaces on the porcelain teeth are now polished and the teeth set aside until we have adapted a thin sheet of 24 or 26-gage casting wax to the areas outlined upon the investment cast. This wax is of a light pink color, and our pencil markings can be seen through it, allowing us to trim the periphery to the exact outline, and attach to place. Next the porcelain teeth are coated with a film of oil, and waxed with inlay wax into their proper position, and the saddle contoured and festooned just as we want the finished bridge to be.

The porcelain teeth can now be removed carefully and set aside; the oil on the wax is removed by washing with a camel's-hair brush and soap or with a little acetone on a fine brush. The wax saddle, clasps and investment model are then soaked in water and invested in one piece in a suitable flask for casting, burned out, cast, boiled in acid and finished, ready to be set at the patient's next appointment.

The advantages of this type of bridge from the standpoint of time saving and tooth structure economy are easily seen, and if good judgment is used in selection of cases and the proper technique exercised, some very useful restorations are the result. We must, of course, caution our patients in this type of bridge, the same as in any removable bridge, that it is absolutely necessary to remove and cleanse it systematically and regularly. Unless this important part is carried out by the patient a failure results very quickly, owing to the larger area covered and the impossibility of cleansing either the teeth or the bridge while it is in position. Therefore, this must be thoroughly impressed upon the mind of the patient when the bridge is first placed in position.

CASTING

Since in our bridgework, both fixed and removable, casting plays a very important part, we will say a few words regarding this process. There are so many diversified opinions regarding the technique employed in casting, and many of these produce such

excellent results in the hands of the one who has developed the particular technique, that it is merely a matter of selection which process we shall use. But the man who selects one method and develops his skill in that particular method, is the one who will produce the best results. Whether he burns his investments out over an open flame or in a gas or electric oven, is immaterial so long as he carries out a systematic and definite procedure in regard to the details, and any man can perfect himself in one of these methods if he will just persevere until he masters it. Repetition with observation in every case is the only way this can be accomplished, because perfectly fitting castings can be and are being made all the time, and the failure of an imperfect casting can be traced to some detail not carried out. In the case of our inlays and abutment pieces, the first step toward a perfect inlay is in the cavity preparation, prepared so we can secure a perfect wax model. Next the operator should see that this wax pattern is perfectly clean before investing, and during investing see that all air bubbles are painted out. Some men use a double mix and some a single mix for investing inlays. Personally I get excellent results with a single mix of investment. Next is the drying and burning out process; this should be done as soon as possible following the securing of the model. Next the casting should be made with clean gold. The minimum amount of change will be found to have taken place when these steps are carried through with no delay. Our larger castings, pontics and saddles are carried through in the same manner, although a double mix of investment is used, allowing ourselves plenty of time to thoroughly paint our wax models before our investment becomes too thick to pour.

The hard casting golds, which are on the market now for bridge abutments, make it possible for us to make thinner and stronger castings than were formerly possible with the casting golds we used. This has allowed us to make a change in our cavity preparations to conserve tooth structure and permits us to stay a safe distance away from the pulp of a tooth and still obtain a maximum of retention, for the danger of the death of the pulp from thermal shock due to the large bulk of metal in deep seated cavities is well known to all of us. This knowledge has helped us develop the three-quarter crown and shoulder preparations. The securing of a wax pattern in these cases, owing to the thinness of the wax, is necessarily contra-indicated in the mouth directly. We, therefore, use the indirect or semi-indirect methods; and in the essayist's opinion the semi-indirect method is the best solution to the problem of securing accurately fitting castings for these cases.

In securing wax patterns for abutment inlays or three-quarter crowns in bridge construction by the semi-indirect method, after the cavity is prepared, a copper band is fitted over the tooth, fitting fairly accurately at the gingival. If we have contact with

an approximating tooth, the band is trimmed so as to allow for that. If we have to restore any great amount of the occlusal surface, the occlusal end of the band is trimmed so that the opposing teeth can come firmly into occlusion. Our next step is to heat the inlay wax and fill the copper band with it in excess and slightly warming this over the flame, it is forced down with considerable pressure until the band is down in place. If we are restoring a large area of the occlusal surface, the patient is instructed to close upon the excess wax, thereby establishing the occlusion. This is then chilled and removed, examined carefully to see that all details of the cavity are copied and, if so, the wax pattern is run full of investment material, allowed to harden, and the copper band removed, the contour carved up on the investment tooth, invested, and cast. This to me is the ideal way of securing accurate well seating castings in this difficult class of cavities, there being little or no opportunity for change due to handling. This method of course can be applied to any type of cast-gold inlay, whether used for an abutment or not.

The indirect method is the filling of a copper band, securing the impression in modeling compound and packing either with amalgam or cement and carrying the wax model from that, removing and casting. Although this is an older method and perhaps better known to most of you, I prefer the semi-indirect method, believing it takes less time and is more accurate.

THE PONTICS

In casting the cusps and lingual surfaces of pontics, we must carry out as far as possible the natural tooth form; and if we carry out the full lingual contour in gold, each pontic should be cast separately and then assembled, being carved so as to require very little solder at the connecting joint and given enough space in the embrasures so as to have these easy to cleanse.

In following out the full lingual contour technique in constructing the pontic, the preference is always for porcelain extensions rather than gold; the highly glazed surface of the porcelain is so easily kept clean, in contrast to the ever present film which collects on the gold surfaces which are not continually scoured in the excursion of food over them during mastication. In fact, any portion of the pontic which impinges upon the gum will be tolerated by the soft tissues more easily if it be of highly glazed porcelain rather than of metal, no matter how well polished it may be. There is little or no irritation as a result of highly glazed porcelain against the soft tissue. To one who has done considerable porcelain work, it is not at all difficult to bake on these extensions either on the long pin facings or upon Steele's removable facings. We still have the gold for strength in an inconspicuous place and where it is easily kept clean. The porcelain facings with the extensions are cemented into the gold framework. I think the days of soldering

facings in place in bridges are over. During the heating up in soldering we have lost some of the strength and oftentimes shades of the porcelain to a greater or less degree, while in contrast to this is the newer way of cementing long pin facings in the casting, having a background of any color cement we may choose, rather than a metallic background with its consequent darkening of the shade of the porcelain facing.

In constructing bridges to replace lost organs of mastication, the proportion of those who attain the highest success among those who attempt this work is relatively small, both in the proper diagnosing and the actual mechanics involved in construction. Nevertheless, I firmly believe the percentage is growing in favor of the better workmen and their products, due to better instruction fundamentally and a revision of teaching methods, resulting in more patient endeavor in striving for the ideal.

In conclusion allow me again to emphasize a few points: 1st, Systematize and standardize your examinations; 2d, utilize every possible factor in diagnosing the case; 3d, keep mouth hygiene and health uppermost in your mind in deciding on the type of replacement; 4th, retain and protect the live, healthy pulps of teeth wherever it is at all possible to do so; 5th, inform the patient of the tremendous importance of continued systematic oral prophylaxis in maintaining the conditions of efficiency and health that have been established; 6th, utilize non-vital or pulpless teeth without apical infected areas which occupy important restorative positions; 7th, inform the patient of the future possible menace of the pulpless teeth if not examined regularly; and 8th, let us prepare ourselves with knowledge and skill to remove diseased conditions from our patients' mouths and replace them with health-producing, sanitary and, as nearly as possible, mechanically perfect substitutes.

25 E. WASHINGTON ST.

President Sturgis:

Before entering into discussion of Dr. Sayre's paper, I would like to read a notice that has been given me. We have listened to this excellent paper by Dr. Sayre. Dr. Sayre, as you know by reference to your program, is Instructor in Prosthetics and in charge of the Crown and Bridge Department, School of Dentistry, Northwestern University. What he has to say carries weight. We are just a little bit behind the schedule and I hope, while I don't want to cut off any discussion at all, I would urge to be as explicit and brief as you can in talking on the subject.

Dr. M. B. Rudd, Richmond, Va.:

It certainly has been a very great pleasure to have with us

Dr. Sayre. I am especially interested in one feature of Dr. Sayre's paper and that is he has been broad enough to recognize something more than one type of restoration in the matter of bridge work. Two years ago we had a very decided movement in this country condemning fixed bridge work. The method he has shown us in his paper in fixed bridge work and necessary importance he points out in care of diagnosing the case as to what is indicated I think should impress us very much. His paper was so thoroughly clear, concise and plain it is scarcely a question of difference of opinion with him. I do not differ with him in any particular in anything he has to say. I would feel loath to pass up such a paper as this without some commendation on our part and personally I have enjoyed immensely what he has had to say and I am sure all of you have.

Dr. D. H. Massie, Lynchburg, Va.:

I don't know that I can discuss a paper like that. We should take more time in partial denture case, as he says. We do not take enough time or study that individual case. We go by certain rules instead of studying each case individually. As it stands and for bridge work and dentures, both fixed and partial, have proven a failure. That is due to two causes, we haven't given the individual case enough consideration. We have not diagnosed our case; the second is that crown and bridge work is divided into two classes. There is no such thing as medium. The most glaring advertiser will do just as good work as we, unless we do the very best work done. If we do not have enough work we try to make some for ourselves. As to nerves of teeth, he brought out that point, to try to save the nerve in every tooth we can, but try that way if we can. In the future, or next year, but in the next two or three years if we have too much stress in the nerve. I don't think we kill enough nerves because they kill themselves later on. Last week I had trouble to extract five teeth on bridges on which crowns were placed, one or two inlays, the man was a beautiful workman. X-ray showed two years after putting on that they were a failure. Crown and bridge work as it stands today is a miserable failure.

Dr. Sayre (closing discussion):

I think that a paper that does not provoke discussion or argument is more or less a failure, as fixed bridge work appar-

ently. I thank Dr. Rudd for agreeing with me in most of my beliefs in these cases. There is a complimentary relationship between him and me this morning. He said that he was glad that a man does not pick on one type of bridge and insist on that type in all cases. That isn't any more possible than for him to select one type of attachment and select that in every case of partial denture. It is not possible to take one type unless you wade out. Dr. Massie says we should spend more time in diagnosis of cases. I firmly believe in that. I believe that probably the greater per cent of cases that are failures, fixed and removable, can be dated from time of diagnosis, but I think if they followed out the step that I have outlined in diagnosing and planning all their cases they will have very little trouble. I think if x-ray and pulp testing, oral examination and all that, study casts before we decide what to put in there, our diagnosis will be well established. I agree with him that a great per cent of crown and bridges are failures. Ottolinguai says there are 95 per cent taken at random from good and bad operators, are failures. Another thing, a lot of crowns and bridges are failures because we have kept no definite statistics. In some locality it is possible to select a clientele to keep check of your cases the same as Dr. Rudd does of his partial cases. Your x-rays can be taken at different times for devitalized teeth and failures can be pretty well checked up on them. In cases where you take patients where they come and do quantity, instead of quality, work that cannot be done. These patients do not come back to you when there is trouble. They go to some one else. They haven't a sufficient amount of financial trouble, the amount is too small for argument. There are good and bad bridges, it is true. We should not attempt to do bad work. We should not temporize with bad pathology in the mouth. I should think we should stretch a point and allow that patient a bridge for practically the same fee as partial denture. If they cannot afford a bridge give them a bridge any way. Be honest with our patients and it is ethical for patients who are able to take up heavier financial burdens to take up part of the stress. Do either the right thing, or else let's not do it. The death of pulp, Dr. Massie says, under our bridges has been the cause of a great many of our failures.

We have not been careful enough about abutments we have used. We have picked on teeth partly gone, some that should have been removed from the mouth before we constructed teeth. We know deep in our hearts are going to be troublesome. I think permanency in dental work is an illusion. I don't think there is any permanent work, except extraction. I think if we can count twenty or thirty years I think we can count that very successful practice. In the death of the pulps under inlays or crowns I will say a word that I don't think we understand the technique, the constructing abutment pieces for these teeth for protecting pulps, as well as fixing bridge to. We can use hard castings of hard metal and use casting thin as paper and still have strength without the danger of bending. I wish to thank you gentlemen for the attention you have given me and the courteous attention I have received. It is my first trip this far south and I am very favorably impressed with things here. I find your train of thought is just as far advanced as it is further east. The thing that it takes to make a good dental society is good dentists and good dentists are founded on knowledge and honesty of purpose. I thank you.

President Sturgis:

We are very sorry indeed that Dr. Friesell, who is so well and favorably known by every one, cannot be with us today, but we have in his stead one connected with the same institution, Dr. Ohl, of Pittsburgh. His subject will be "Internal Anatomy of Mandible and Maxilla." That is a subject, of course, upon which all our work is based and I am sure he will have something interesting for us if you will give your attention to Dr. Ohl.

Dr. L. W. Ohl, University of Pittsburgh, Pittsburgh, Pa.:

Mr. President and Members of the Virginia and North Carolina Dental Societies:

I am going to present to you a little study which I have made which has helped me to clear up some of the difficulties which presented themselves when I was in general practice and after hearing two of the papers last night and these papers this morning I believe unquestionably there will be a field which I have never dwelt particularly upon before. I naturally am presenting this subject from my position, presenting it from the

standpoint of the exo-dontist, particularly the anesthesia and extraction technique, a few of the principal points.

Dr. Ohl then proceeded to read his paper entitled "Internal Anatomy of Mandible and Maxilla."

(Unable to secure Dr. Ohl's paper but complete discussion follows.)

President Sturgis:

Gentlemen, you have heard this most interesting paper by Dr. Ohl. He has brought out some interesting points.

Dr. Guy R. Harrison, Richmond, Va.:

You know I always talk too much and for that reason I made up my mind that I would not talk quite so much at this meeting. The specimens were very beautiful and very important and interesting. The Doctor brought out knowledge of internal anatomy. It is essential. One point in connection with that is knowledge of textbook anatomy alone is not sufficient. For instance, the Doctor shows the landmarks; the surgeon who has a knowledge of anatomy in textbooks and not knowing the anatomy as seen is an entirely different matter. Dr. Royster, I recall, presented a paper—I am sorry he is not here—which brought out this point splendidly, he says, to paraphrase, the old time surgeon who used anatomy, that

"We have taken him from our list,
He never will be missed."

For instance, to do a carotid ligation based on knowledge in textbooks would not be practicable at all. I cannot see why any man here would not be interested and want to discuss this subject. It has a very practical bearing on our daily work, I may note x-ray findings in reference to tooth roots. A statement has been made a number of times that this root projects into the maxillary sinus. I should like to be enlightened. He could see the close relationship existing many, many times. A word about curettage, why any objection to proper curettage I fail to see, but, on the other hand, we know that many times it is done without any reason. Dr. Gilmore, the world known surgeon, stated that we used curettage until we reached mandibular and maxillary tube above. I hope the Doctor will stress the point that where any curettage could be done. He referred to injudicious use of cutting, or scraping bone. I was particularly interested in specimens in reference to work of

Dr. Wolf, of Washington, in Interosseous Anesthesia. Dr. Wolf's work is very wonderful and practical work and he also brings up the point Doctor stated, that he saw no reason why every practitioner should not use conduction anesthesia. He should have added, further, if he had intimate knowledge of asepsis. The Doctor spoke of one case in which there had been destruction of the artery in the mandibular nerve. I would like him to explain. In reference to mandibular tube and the root ends of teeth: we hear statements made on the basis of x-ray findings, one film, without stereoscopic, or views from an angle, that this tooth root is in contact with the mandibular foramen. That is impossible to see, I think. In reference to conduction anesthesia in maxilla: you know conduction anesthesia in reference to maxillary is only done in a small percentage of cases. I feel again, Mr. President, that I am sure that every man here has a very strong interest in this, it is such a practical thing and I think that every method should be used to try to get discussion. It looks as if in this meeting that it is absolutely impossible to get any discussion and I am sure that every one does not agree with what has been said. It is only by discussion, as Dr. Williams stated in discussion of Dr. Rudd's paper, that by discussion, the differences of opinion, that we can go forward.

Dr. H. N. Walters, Warrenton, Va.:

Please describe a little more clearly the point of insertion of needle in mandibular injection where you go up higher in order to produce your perfect anesthesia where you try to go up above the foramen with the point of your needle. That was the finest thing I have seen or heard in a long time. The talk and the text were all so absolutely clear and concise and without waste of words, or wasted minute. It was worth while hearing that paper and I am sorry I cannot take issue with him anywhere and pick him to pieces because it seems that is the kind of successful clinic. Last October I gave a clinic for the Fourth District Dental Society and if that is any sign it was a most successful one. The boys pointed out where I would have flaws. My clinic was most successful, more so than anything I have seen or heard here because they bucked me hard!

Dr. Ohl (closing discussion):

In Dr. Harrison's very able discussion he brought out several points which owing to time I neglected to mention. The first one, textbook anatomy, in referring to that I will say that I have succeeded in finding but one specimen of the maxilla in all the skulls that I have ever examined which comes anything near to the reconstruction which is given in the various anatomies and physiologies. Only one which shows the definite course of the posterior, middle, anterior branches of the second position of the fifth which supplies the teeth normally in the maxilla. Dr. Harrison also spoke about my apparently making light of the technique of conduction anesthesia. I intended to do no such thing. A knowledge of not only topical, but internal anatomy, is decidedly essential. A thorough knowledge of surgical technique, asepsis and so on is of vital importance before undertaking to carry out these things. If the average general practitioner will put forth a comparatively small amount of time he can master with but very little difficulty the preliminary fundamentals and proceed with greater success in performing these necessary injections and operations under it. Dr. Harrison also spoke about the apical ends of the root extending into the antrum, no one can say from an x-ray examination that they do. The point is in sectioning many of these specimens we find no bone existing from the apical end of the root and as a result of this study comparatively of different cases we are much more able to use our films in making a definite diagnosis and proceed with our necessary surgery without causing any unnecessary complications. Dr. Harrison also asked about the case in which the contents of the mandibular canal were involved. It was the case of a youngster, sixteen years of age, badly broken down first year molar, with exposed pulp. Case diagnosed as beyond repair, no apical infection. Had proper technique been used to remove that tooth there would not have been that complication, slight as it happened to be, in this case. Had that operator realized the possibility of a complication of that kind he unquestionably would have decided on a different technique from that which he used. The statement which I made about apical ends penetrating the floor of the antrum also applies to the cases in which from the x-ray examination the

end of the posterior lower teeth apparently are in contact with the mandibular canal, which is not the case in many instances. The canal as I showed on these two mesiodistal series of sections, may be either through the lingual or to the buccal process from an eighth to a quarter of an inch from the root, although it seems to be in contact. My second discussor asked for a little more elaboration of the technique of making mandibular injection. The technique is essentially exactly the same as you undoubtedly are using that, except instead of ligating the internal oblique line of bone, in going up higher from one quarter to three-eighths inch higher we ligate only the external oblique line and then the internal attachment of the temporal muscle and soft instead of the hard internal line. Our technique of injection is identical with that you unquestionably are using. I thank you.

President Sturgis:

It has been suggested to have paper at 9:30 tomorrow morning for Dr. Howard's paper, with its discussion, and then resolve into our separate meetings and have our Business Meetings. I hope that will meet with the approval of the Societies.

Adjourned 1:20 p.m.

MEETING OF THE HOUSE OF DELEGATES

MAY 1ST, 4 P.M.

The House of Delegates was called to order by the President.

Dr. W. M. Robey presented to the House of Delegates the following changes, for consideration:

Article III, section 2, line 4 of the Constitution: After the words, "good moral character" add "and a member of a component District Society."

That the name "National" wherever it appears in the Constitution and By-Laws be changed to "American."

A motion was made that the rules be suspended and the above changes be made.

The motion was seconded and passed.

Dr. J. N. Johnson discussed the relation of the District Societies to the State Society, in reference to the requirement of each member to be a member of their District Society.

Dr. W. M. Robey presented the following resolution and addition to Article V, By-Laws: That members suspended while in service of the World War, for nonpayment of dues, may be reinstated upon application through regular channels, accompanied with one year's dues. In case the applicant desires to take advantage of Article III, sec. 4, of the Constitution relative to Life Membership, his twenty-five consecutive years shall be reckoned by payment of all back dues, excepting period of active service and illness resulting therefrom.

The resolution was discussed by Dr. R. M. Morrow.

A motion was made by Dr. J. Martin Fleming, to accept the resolution.

Motion was seconded and passed.

Dr. R. M. Squires presented the following names as applications: C. A. Adams, Jr., Durham; Wm. A. Hayes, High Point; E. M. Medlin, Morganton; H. E. Nixon, Edenton; T. S. Wilson, Leaksville; H. R. Hege, Mt. Airy.

It was moved and seconded that these applications, with the exception of H. R. Hege, be accepted as members.

Motion passed.

The House of Delegates adjourned for one minute.

The House of Delegates was called to order by the President.

The above names passed the second reading and was accepted as members of the Society.

The House of Delegates adjourned.

TUESDAY EVENING, 8:00 O'CLOCK

GENERAL SESSION

ELECTION OF OFFICERS

The following officers were elected:

President-Elect—Dr. J. A. McClung, Winston-Salem, N. C.

Vice-President—Dr. L. R. Gorham, Rocky Mount, N. C.

Secretary—Dr. H. O. Lineberger, Raleigh, N. C.

Treasurer—Dr. E. G. Click, Elkin, N. C.

Essayist—Dr. Whitfield Cobb, Winston-Salem, N. C.

Members of Examining Board: Dr. J. S. Betts, Greensboro; Dr. C. A. Thompson, Wilson, N. C.

Delegates to the American Dental Association: Dr. F. L. Hunt, Asheville, N. C.; Dr. Chas. L. Alexander, Charlotte, N. C.; Dr. Conrad Watkins, Winston-Salem, N. C.

Alternates: Dr. E. J. Tucker, Roxboro, N. C.; Dr. D. F. Keel, Greensboro, N. C.; Dr. J. S. Spurgeon, Hillsboro, N. C.

Invitations from the Raleigh Chamber of Commerce, the Sir Walter Hotel, the Civitan Club and the Kiwanis Club, to meet in Raleigh were read.

Invitations from the Civitan Club, the Hotel Elwood, the Kiwanis Club, the Chamber of Commerce, the Sheraton Hotel, the Mayor of High Point, the Rotary Club, to meet in High Point were read.

An invitation from the Carolina Hotel, to meet in Pinehurst was read.

Raleigh was chosen as the next place of meeting.

A motion was presented by Dr. J. S. Spurgeon that a resolution of appreciation be sent to Mr. Leonard Tufts of the Carolina Hotel.

The motion was passed and the Secretary ordered to send the letter of appreciation.

The following letter was read:

Mount Airy, N. C., April 29th, 1923.

Dr. J. A. McClung,
Pinehurst, N. C.

Dear Dr. McClung:

I have been sick for two months with rheumatism and kidney complications, and am going to the hospital tomorrow for an operation and treatment, so of course cannot be in attendance at the Society meeting. I am more sorry than I can express to miss the meeting, and especially since I was to have had the honor of giving a clinic. I want to thank you for presenting my name for one of the clinicians from our district. I appreciate it very much and hope I may, some other time, have the pleasure of giving one, please convey to the other members of the committee and the Board of Censors, my sincere thanks for the honor conferred, and express my regrets at not being able to attend.

With best wishes,

Your friend,

J. E. BANNER.

Dr. J. S. Betts presented the following resolutions: Resolved, that the North Carolina Dental Society has heard with regret of the change in the work of the State Board of Health which carries Dr. G. M. Cooper to other departments of health work. We feel that the work of Dr. Cooper in directing the dental inspection and work in the public schools of the State has been of more value and service to the public than any other work attempted by the State Board of Health.

We feel further, that no person in either the medical or dental profession could have accomplished what Dr. Cooper has done in organizing and putting in working order the plans under which the work has been done.

We regret his transfer to another department; and will always hold him in affectionate remembrance.

To Dr. Cooper's successor, Dr. J. S. Mitchener, we pledge the same undivided support which it has been our pleasure to give Dr. Cooper.

The Society wishes also to go on record that it appreciates the work of Dr. J. C. Johnson in supervising and directing his able corps of helpers whose work has meant so much to our State.

The motion was seconded by Dr. J. M. Fleming, and was adopted.

Dr. D. F. Keel moved that a telegram be sent to Dr. Chas. Regan who is in the hospital at Laural, Md.

Motion seconded and was so ordered by the President.

There being no further business, the Society adjourned.

WEDNESDAY MORNING, MAY 2D, 1923

SCIENTIFIC SESSION

Dr. S. Robert Horton, Raleigh, N. C., called the meeting to order at 9:55 a.m., in the Music Room, Hotel Carolina.

Dr. Horton:

We have the pleasure of having Dr. Howard, of Atlanta, with us this morning and we are going now to hear him at this time. Dr. Howard.

Dr. Clinton C. Howard, Atlanta, Ga., then read a paper entitled "Grandular Influence Considered in Skeletal Development, Featuring Orthodontic Types." (Illustrated with lantern slides.)

GLANDULAR INFLUENCE CONSIDERED IN SKELETAL DEVELOPMENT, FEATURING ORTHODONTIC TYPES

(From the Good Samaritan Clinic, Atlanta, Ga.)

BY CLINTON C. HOWARD, D.D.S.
Visiting Orthodontist

The object, in presenting to you the subject of the internal secretions as applied to oral development is not to offer material of known definite value, but to call your attention to certain deficiencies of our diagnostic acumen, in which recent work seems to warrant this discussion.

Through our teachings we naturally think that practically all etiological factors responsible for mal-occlusion are of local origin. We have no teaching entity to aid us other than local causes. The tardy loss of deciduous teeth, loss of a permanent molar, adenoids, tonsils, poorly contoured fillings or crowns, thumb-sucking, pacifier and other habits are of local influence. It is not denied that any one of the above will produce a de-arrangement of the teeth, but we emphatically deny these superficial influences a place of such importance as has been taught in the past.

In our opinion, based upon an observation of several thousand cases, the majority of individuals with mal-occlusion should be studied from a general standpoint with the help of medical men who have been properly trained in the diagnosis and treatment of the mouth. Fortunately, we have this privilege.

For the past fifteen months we have studied general body development along with twenty-nine physicians, as a member of the staff of the Good Samaritan Clinic, of Atlanta, an institution devoted to the diagnosis and treatment of endocrine disorders. In this work the development of bony tissues is one of the principal factors. The growth and progress of the arches and jaws have been made a definite phase of the general body observation, so that we have had the advantage of comparing deficiencies of the mouth of all avenues of the human body.

Let us recall the attitude of any one of the localized specialties of medicine—does the educated ophthalmologist attribute all of the eye diseases to local origin? Should you familiarize yourselves with his vision of this field you would be led to an intimate knowledge of all avenues of the human.

Surely it is high time that the orthodontist awaken from his long sleep which has been greatly lulled by the tune of mechanics, by the soothing airs of "bands," piano wires, and brass string ligatures. In the recent past his dreams have been soothed by a fiddle tuned with "ribbon" strings and bracket clasps. The pity, the regrettable thought is, "who has been made to pay the fiddler?"

CORRELATION OF THE JAWS AND BODY

Let us take a comparatively simple condition (Figure 1). In this mouth it is quite apparent that the arches or bone structures have failed to develop in sufficient width to allow the permanent teeth to occupy a normal position. The width of both arches have remained practically the same since early childhood. After a



FIGURE 1

This mouth demonstrates a typical Class 1 case and his body contours and measurements correlate perfectly with his mal-formed mouth. His age is 22 years; his height is 62 inches, and there is a disproportion of four inches in favor of his long bones.

Had this case been studied with the idea that its mal-formation merely represented a single link in a long chain of body developmental discrepancies, we would have advised accordingly and instituted orthodontic interference with a full understanding as to the probable end results.

thorough investigation of any local cause, we can ascertain no satisfactory reason for the condition. Most likely we then direct our attention to mechanics and treatment, and very probably our efforts in broadening these arches to sufficient width to accommodate the crowded teeth will be successful; this is a service provided the teeth will permanently remain in their new positions. For no apparent cause, regardless of length of retention, some of such conditions will, in an astonishingly short time, return to their former mal-positions. We treat the second time with a like disappointment. Finally we give up in despair or some resort to extraction to restore esthetics. Let me remind you that few essay-

ists report their failures, also that many results illustrated are pictures taken immediately after appliances are removed, all of which add nothing to the actual value of treatment. The records worth while are those representing treated cases from three to five years after all appliances have been removed.

ENDOCRINE INFLUENCES ON BODY DEVELOPMENT

Students of endocrinology agree that certain ductless glands play a definite role in controlling growth and development. To bring this forcibly to your attention, I might mention a few types of individuals with which you are all familiar. Cretins present a classical picture of perverted growth. Dwarfism and gigantism are not uncommon types. Acromegalics always present an over-development of the extremities and lower jaw.

CRETINS

The cretins, as based on clinical findings, are deficient in thyroid secretion. The most prominent physical markings are a decided retarded growth throughout, a mal-shaped cranium, retarded hair growth, short or stubby fingers, retarded mentality, and always mal-formed dental arches. Your essayist has had an unusual opportunity in observing many of such cases and not one has failed to present one or more congenitally missing teeth. Several have been observed under five years of age and these have from one to three congenitally absent deciduous teeth. The failure of these teeth to form is surely not due to a local cause. The mal-formed hand, the deficient stature, nor the mal-formed cranium were directly produced by any extraneous influences. Should the orthodontist interpret their ill-shaped and mal-related arches in such cases as having been produced by local causes? Should they expect orthodontic interference to be effective? The bone in which the teeth are imbedded is but one link in a chain made up of many misshapen links. The entire picture must be retouched before that small part, the mouth, can be permanently cured.

ACROMEGALICS

Marie in 1886 called attention to this peculiar anomaly. The pituitary gland is given credit for its production. The physical picture in advanced cases is as classical as that of cretinism. The over-growth of hands, feet and lower face is unmistakable. The lower jaw and teeth protrude anteriorly. After these bone defects are once established no reduction is possible. The orthodontist should immediately recognize such types of mal-occlusion as being beyond the realm of his field. Regardless of his efficiency his efforts will be in vain, as long as the over-growth of bones is in progress. (Figure 2.)

Literature gives practically no information on acromegaly in children. Some authors state that it never occurs in pre-adolescent

individuals. In our opinion, we have observed and attempted treatment on cases of acromegaly as young as twelve years. As they passed into post-adolescence, the picture became more pronounced as well as most convincing. Orthodontic treatment was a miserable failure, for as stated above, such anterior mandibular protrusions

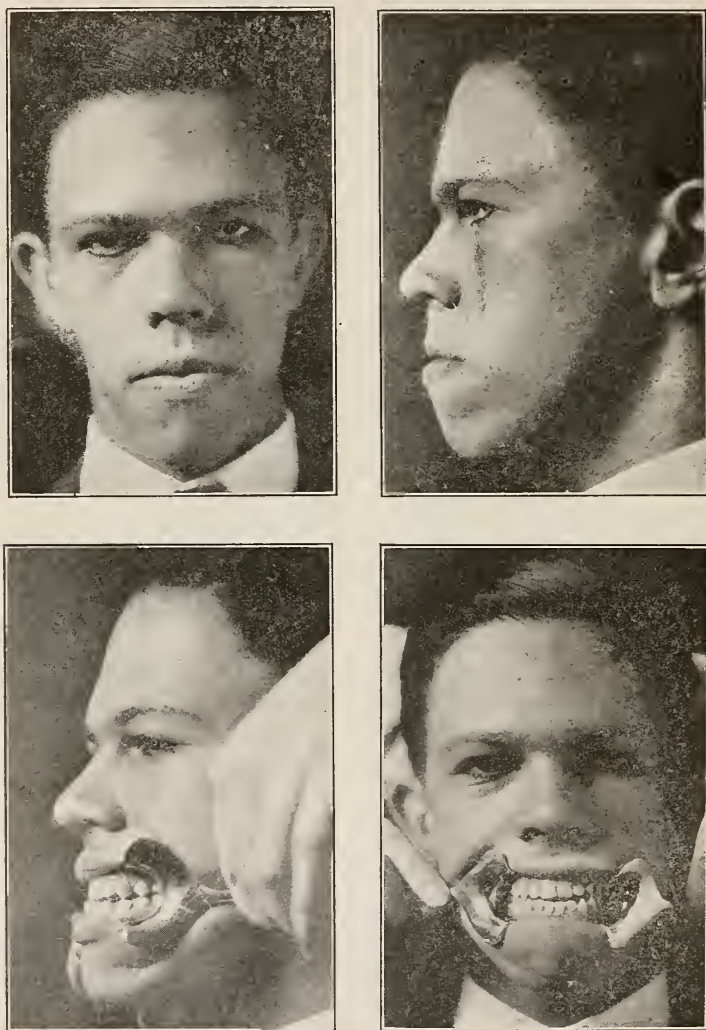


FIGURE 2

A classical acromegalic face and mandibular development

are not within the field of orthodontics. Our best service is to recognize these conditions and in such save the individual useless expense and inconvenience.

HYPO-GONADS

The gonads or organs of reproduction have a great influence on osseous or body proportions. In lower animals, horses, cows, hogs, etc., the effect on body growth by their complete removal is common knowledge. In the human being some individuals suffer a retardation of sex development. The prevalence of such conditions is not generally known, the reason for which is obvious. Only a medical clinic for the study of endocrine disorders will reveal such secrets, so closely guarded by the individuals.

Without discussing the many physical and temperamental deficiencies of definite hypo-gonad cases, you will be interested in what we believe has a new but direct bearing upon mal-occlusion. All cases presenting unmistakable hypo-gonadism have shown a marked disproportion in body measurements and invariably have possessed a mal-formation of the dental arches. In further explanation of "body measurements," it is explained that normal people should present a length from the crest of the pubic bone to the top of the head as equal to that from the pubic bone to the heel. A difference of the two measurements as much as two inches would be within the bounds of "normal variation." A difference of nine or even five or six inches would indicate a disproportion of osseous growth. (Figure 3.) More than fifty of such cases have been recorded in the Good Samaritan Clinic and not one has failed to present a decided mal-formation of the dental arches.

We believe, as definitely, that an individual with a disproportion in favor of long bones will present a mal-occlusion, as we believe "thumb-sucking" is an etiological factor.

We further believe that all fat people with normal body measurements will present normal dental arches, normal jaw development, and therefore normal occlusion.

In closing this brief discussion, my appeal is for a broader vision in diagnosing all phases of dental deficiencies. We should see further than that which is confined between the nose and chin. Our real worth to humanity depends upon the development of a teaching entity which directly correlates the diseases and deformities of the mouth and jaws with the entire body.

20 DOCTORS BUILDING.

(The author wishes to acknowledge the valuable assistance afforded him by Dr. Arch Elkin, Medical Director of The Good Samaritan Clinic.)

President Horton:

I am sure we have all enjoyed this wonderful paper and I am frank to say that I am willing to prophesy just a little on

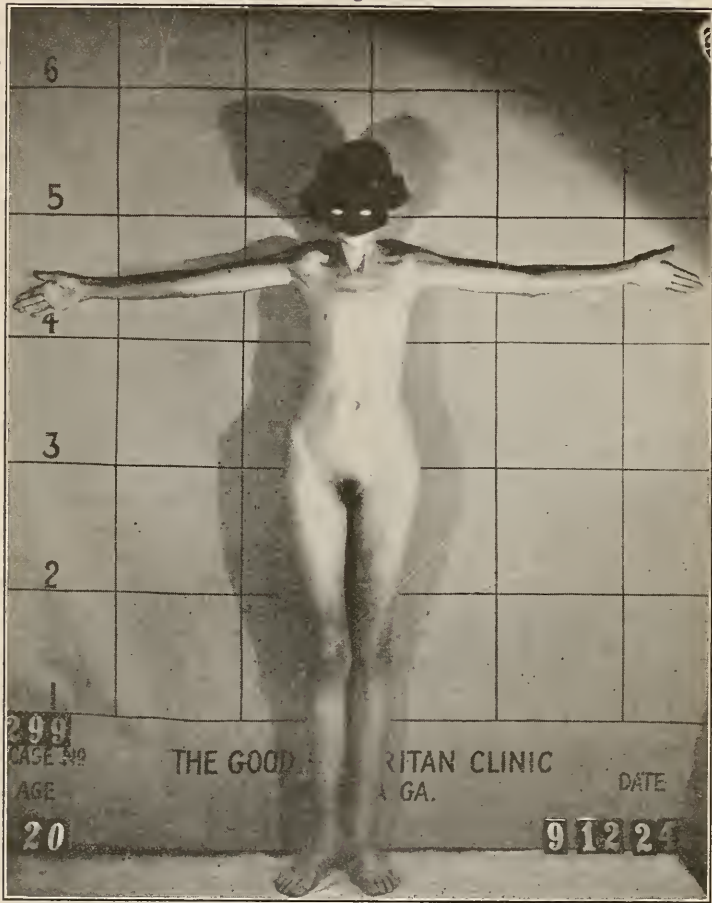


FIGURE 3

This case shows the usual disproportion of a hypo-gonad. Note the manifest difference in the long and torso measurement as described in the body of this paper. According to Englebach's Classification, which is used in this clinic, all hypo-gonads show this picture and in our experience they have all shown poorly developed arches. In this case the epipheseal unions are lacking and although 20 years of age, she has never menstruated.

this line. I believe that the endocrine glands in the next ten years are going to open possibilities for dentists and medical men that we little dream at present. I had the pleasure of reading the paper and seeing the lantern slides of Dr. Tucker's at the Virginia meeting last year, and then seeing Dr. Howard's demonstration here proves beyond a question of doubt that every dentist should equip himself with all the literature he can get on this subject and study carefully because I am satisfied beyond a question of doubt that these endocrine glands will do more for us to develop our work and to make us cognizant of things we see in the mouth—under-development and over-development—than anything else we can study and while we may not be equipped to treat these cases we will at least be equipped to recognize them and send them to those who can treat them.

Dr. Guy R. Harrison, Richmond:

It is indeed refreshing to hear a dentist, and I may say with frankness, an orthodontist of all people, who is able to think of terms other than the mechanics. That is not meant for anything other than appreciation because we as practitioners of dentistry, we have been thinking in terms of mechanics for years. Another thing occurred to me, that he is typical of the fact of a man who is a student. Elbert Hubbard's recipe for perpetual ignorance is "to be satisfied with your opinions and content with your knowledge." The Doctor that is not is a student. This particular field is really in its infancy. It is a little bit younger than that and there are many phases of which we are in absolute ignorance. For instance, we see things that enthuse us in subject and we attribute too much to that particular field, which we have every evidence to believe. All of us are guilty of this. He pointed out to you that there was great danger of confusing some of the cases which he believed to be of a purely local nature, but putting in classification of some endocrine disturbance and in thinking of this subject and in studying this subject I am reminded of a story—that is I don't know exactly where we are. The story was that there was a certain member of the community that was quite fond of the article Irvin Cobb calls "good old sinful alcohol," he was present one morning on a corner supporting a lamp post, a stranger said, "Pardon me, can you direct me to the location

of the Second Presbyterian Church?" He said, "Sir?" He repeated his question. He said, "Brother, you will have to excuse me, I haven't seen the First one yet." Now many things that we may possibly attribute to local causes are no doubt due to endocrine disturbance, but, on the other hand, if we have not found the First Presbyterian Church we must be very careful of that particular thing. I think one of the most unfortunate things that has occurred to the student of endocrinology is the fact that that master student of endocrinology, Cushing, has recently come out with a great deal of sarcasm and has thrown a great deal of cold water upon this particular subject. I am sure that Dr. Howard agrees with me. In other words, he has gone from the place he ought to occupy as being master student to be skeptical. He not only is skeptical, but he is creating in the mind of the student a condition which is not conducive to good work. One more word and I will stop. I may express the hope that the Doctor can get from the members of this profession more aid than we have been given in the past. As he told you, most of the facts in reference to endocrinology have to do with cases after they have developed, not in their pre-adolescent stage, and I want to tell another story if I may which illustrates this. In a certain movie theatre there was being made a peculiar representation of some kind of king, this king was a big six-foot black, he would walk into his throne, not only a skin but a live leopard swung across his shoulder, the little pickaninny came behind waving the feathers and during the making of the picture the leopard got excited and began making trouble, and the director yelled, "Whatever you do, don't stop moving your fan," and the pickaninny's eyes began to get larger and larger and he said, "All right, sir, all right, Jim, all I ask you is don't cast her aside." I hope, Dr. Howard, you will continue your studies.

Dr. D. F. Keel, Greensboro, N. C.:

I would like to give you the information that you can get this literature on Dr. Inglebach's work by subscribing to a magazine which comes out once a month and by writing to him you can get an application blank that he will probably send. I had the pleasure of hearing Dr. Inglebach's discussion of Dr. Howard's paper at the St. Louis meeting of the American

Medical Association and Dr. Inglebach is a great man and so is Dr. Howard. There is always something brought into my mind—this reminds me of a story of a nigger checking up on himself. He went to a drug store and he called up Dr. Anderson, "Does you need a chauffeur?" The Doctor replied he didn't need a chauffeur. "Are you satisfied, perfectly satisfied?" The Doctor said he was. The nigger said, "All right, good bye." A gentleman in the drug store who needed a chauffeur said, "I will give you a position." He replied, "Boss, I don't want a position, I am just checking up on myself." If we get down into endocrinology we can check up on a lot of things.

Dr. J. H. Wheeler, Greensboro, N. C.:

I am not in the least qualified to discuss Dr. Howard's paper. I simply want to thank him for giving me some information that I did not possess and to stimulate in me a desire for literature because I want to get on to this thing. If I had heard not another word and should have spent these three days I should have been more than amply repaid by this lecture Dr. Howard brought us this morning. I was rather sorry to hear the Doctor say that one of the authorities had gone back on his findings and research and all that. That seems to be a little bit discouraging, but it does seem to me from the information Dr. Howard has brought us this morning and from the observation Dr. Inglebach has made beyond that there must be something in this thing, to say the least it is well worth the consideration of thinking men, and we cannot do less than give the best that is in us to the study of this question of the ductless glands and see wherein humanity is deficient in bone development, or over bone development. It seems to me if there is any truth in it that there are unlimited possibilities for the benefit of humanity. I thank Dr. Howard for this.

Dr. Byrnes, Atlanta, Ga.:

I am sure we have all enjoyed Dr. Howard's paper. I have the honor of coming from the same city that he does. I am prouder of it now than an hour and a half ago, I shine in reflected glory. I am not at all surprised to see the impression Dr. Howard has made. I know you are well repaid and I have had the pleasure of hearing him before and have had the pleasure of hearing some of those with whom he is associated

in this work. I am interested to know and have from him for the benefit of those present in his closing remarks just what results have been maintained in this work. In other words, the thought I want to throw out is this: we have viewed with almost consternation the last picture thrown on the slide. We think that that condition took many years to develop, yet it was corrected in the period of nine months. It seems to me there is just a thought that should be thrown out and give us pause. It would seem that a correction at that time, which is not entirely mechanical, which is not related to surgery, because we get wonderful results in surgery, by simply cutting out and starting over, but when we are calling upon the functions to get our results, it seems to me that we might be a little slow in jumping at the conclusion that these results are going to be maintained. I do not mean to imply that they are not. I am just anxious that they shall be. I would like to know whether these results of his observations was used—I recognize that these are new fields—if these results are being maintained with at least a certain degree of promising satisfaction. I want to thank Dr. Howard and I feel like I appreciate the appreciation that has been shown Dr. Howard.

Dr. C. B. Gifford, Norfolk, Va.:

I have indeed enjoyed Dr. Howard's wonderful talk. He has shown us and most conclusively, that education is most essential. You cannot stop, you have got to keep working ahead. One case there I would like to ask Dr. Howard's opinion on, that was the child six years old, very beautiful, as she grew older very unfortunately deformed. You said that case you thought was due to local conditions. You would call that a tonsil case?

Dr. W. H. Pearson, Norfolk, Va.:

I have thoroughly enjoyed Dr. Howard's paper. I have known Dr. Howard some time—I won't tell his age today, at least. That was a most interesting lecture he gave us and gives us great food for thought. There is one thing that the dental profession needs to do, to study more. This ought to be a great impetus to get to work and dig. We call ourselves scientists, but if you sift it down we come mighty close to being plain ordinary old mechanics. In order to get on true scientific basis is to learn more and teach our men on a de-

cidedly more scientific basis than it has been done. I very much enjoyed the lecture we had here day before yesterday of the Health Board on Hygiene, a subject in which I am very much interested, but I noticed when he began his lecture he started out at the embryo. He will have to step back still further and begin with conception. He has not gone back far enough. We have got to do the same thing, we have got to go back to rock foundation. The statement is made by Englishman that the late eruption of permanent teeth was an index to mental deficiency. This man knows what he is talking about. He touches all parts of the body. We have just started the surface yet. I wish to thank Dr. Howard for the information he has brought us this morning and I hope that each one of us will resolve to dig more.

Dr. D. E. McConnell, Gastonia, N. C.:

I indeed enjoyed this. In the last few years there have been three outstanding developments in the medical and dental world: these three things have been focal infection that caused trouble at a distant point, the theory of vitamins and this development of the study of the ductless glands. To my mind, we are just beginning to get down to the very fundamental facts. Not the results, but the final causes of a great many things that the dental profession and the medical profession have studied for years. There have not been any developments within the last two years that have been so extremely interesting as this study of the ductless glands. While I have been really an observer of other men's studies, yet it has been extremely interesting to see the facts that have been brought out, and especially their final bearing on our day's work. To my mind, the day is coming and not far distant, when the problem of tooth decay will be solved along the line of finding the function of these master glands, as you might call the ductless glands. The problem of tooth decay lies in the metabolism of the salivary gland. That is governed by these ductless glands. This whole problem then is a problem of not only tooth decay, but that salivary balance which, probably influenced by some of these ductless glands, carries with it the question of calcium deposit. If you had the means of influencing these master ductless glands you could give your patient an absolutely balanced normal saliva, you

would at once get rid of the problem of tooth decay and pyorrhea. We occasionally see individuals who seem to have that happy balance. Salivary secretion that not only prevents decay, but does not deposit the excess of calcium salt which is very often the cause of pyorrhea. I am interested as these men ascertain basic facts that go back and throw light on things that have been known for years. For instance, in our school twenty-five years ago, the point was brought up that in Switzerland nearly every woman would have goitre and they at that time were speaking about that in limestone country and said lime caused that. It goes back now that for some reason in these localities something disturbed the calcium metabolism of these women. When we get to where we find which one of the ductless glands governs the calcic metabolism of our patients, we will be at the very basis of our troubles. That is the most interesting thing that has come up. I have enjoyed not only hearing a paper like Dr. Howard's but the discussion with my medical friends, the marvelous changes from treatment with extract of ductless glands. A patient in one year under treatment went to a gain of over six inches in height. That was from deficiency of thyroid as well as pituitary. A physician was telling me of another case of a young woman who had made as marvelous a change in development as Dr. Howard's patient. These things are interesting not only as observations of other men's work, but they are facts in our every day work. When the time comes when we will know just which one has influence on calcium metabolism we will be right down to the foundation of our work. I enjoyed Dr. Howard's paper very much.

Dr. Howard (closing discussion):

It is indeed gratifying to note the interest you have accorded this cryptic and decidedly undeveloped subject.

Regardless of its embryonic status, the methods employed by endocrinologists in studying the symmetry or asymmetry of skeletal growth most assuredly offers a basis for correlating the jaws with the body.

The greatest of all advancement to materialize in the dental world will develop through a broader knowledge of the influence of the total body complex upon mouth anomalies. The charg-

ing of oral discrepancies to so many body ills will fade into insignificance as compared to the influence of impaired body function upon the health and development of the oral structures, and this applies to cavities, pyorrhea, mal-occlusion, etc, etc.

Adjourned 11.20 a.m.

WEDNESDAY MORNING, 11:30 O'CLOCK
GENERAL SESSION

Meeting called to order by President Horton.

REPORT ON PRESIDENT'S ADDRESS

Your Committee on President's Address beg leave to make the following report:

We deem it unnecessary to say that this was an able, well prepared address—since those who heard it can testify to that—but go directly to the recommendations worked out.

We recommend:

1. That the Society employ an efficient Secretary at a salary of \$500 per year, whose duty it shall be to secure and make contracts with clinicians and exhibitors for our annual state meetings; to arrange and publish bulletins and programs, look after all clerical work of the Society and assist in so far as he may in the perfection of the district organizations.

2. That a committee be appointed to look into the advisability of carrying our own liability insurance and report at our next meeting.

3. That the time of meeting be left with the officers after the place of meeting has been selected by the Society.

4. That a committee be appointed to encourage every hospital in the State to appoint a dentist on its staff and to secure, if possible, a dentist on the staff at all State and philanthropic hospitals under the supervision of the State Board of Health.

5. That a committee of ladies be appointed each year, the chairman of which shall reside in the town of meeting, if possible, to provide entertainment for the visiting ladies.

6. That a committee be appointed to work in conjunction with a committee from Virginia—if they see fit—to develop plans for an annual mid-winter clinic in Richmond.

7. That a loving cup be offered by the State Society to the District giving the best clinic at the annual meeting—this to remain the property of the District for one year or until won by some other District.

8. That we recommend the suspension of the publication of the proceedings of the North Carolina Dental Society.

Respectfully submitted,

F. L. HUNT,

J. H. WHEELER,

C. C. KEIGER,

H. L. KEITH,

R. M. SQUIRES, *Chairman.*

Dr. E. J. Tucker moved that the report be adopted.

The motion was seconded and accepted.

TREASURER'S REPORT

Receipts

Cash received from former treasurer----	\$ 492.09	
Government War Savings Stamps cashed_	235.00	
Interest on Certificates of Deposit-----	10.50	
Received for membership fees-----	116.00	
Received for dues-----	2,591.00	
Total receipts-----		\$3,444.59

Disbursements

Clinicians' expenses at Wrightsville----	\$ 133.07	
Membership fees returned-----	12.00	
Printing Proceedings-----	266.50	
Secretary's supplies and printing-----	169.86	
B. C. Beckwith (attorney's fees)-----	50.00	
American Dental Association dues-----	861.00	
Secretary's salary and expenses-----	158.07	
Treasurer's salary and expenses-----	138.38	
Fee for Treasurer's Bond-----	10.00	
Total disbursements-----	\$1,798.88	
Balance on hand-----	1,645.71	

\$3,444.59

May 1st, 1923.

Those in arrears for 2 years:

T. T. Ashburn, J. G. Barnett, C. H. Chamberlain, Thos. F. Davis, J. B. Millikin, J. V. Montgomery, C. R. Wooten, M. G. Adams, R. H. Perkins, C. W. Regan, J. M. Underhill, J. T. Underwood, W. D. Gibbs.

A motion was made to continue Dr. C. W. Regan another 12 months, on account of illness, and to continue Dr. C. H. Chamberlain another 12 months on account of circumstances.

The motion was seconded and passed.

A motion was made to accept the report of the Treasurer.

The motion was seconded and passed.

REPORT OF AUDITING COMMITTEE

PINEHURST, N. C., May 1st, 1923.

We, the undersigned Committee appointed to audit the books of the Treasurer of the North Carolina Dental Society, beg to submit that we have examined the books carefully and find them accurate.

Committee:

P. C. HULL,
J. R. EDWARDS,
E. R. WARREN.

REPORT OF THE ETHICS COMMITTEE

Dr. F. A. Macon gave as the report of the Ethics Committee, the resolution to amend Article I, section 10, of the By-Laws, which was taken up before the House of Delegates, and was tabled.

REPORT OF EXECUTIVE COMMITTEE

Mr. President and Gentlemen of the North Carolina Dental Society:

The Executive Committee has very little report to make. We have met two or three times since our last annual meeting, for

the purpose of threshing out the problem of dues. The result of this has been published and send out by the Secretary, and once to change the date and place of meeting.

The officers of the Society have so thoroughly worked out the plans for this, the greatest meeting in our history, that we were left nothing to do.

On behalf of the Society, we desire to thank the hotel management for the excellent service, the visiting speakers and clinicians for their helpful contributions, and the exhibitors for their attractive exhibits; all of which have been large factors in the glorious success of this meeting.

Respectfully submitted,

R. M. SQUIRES, *Chairman*,

W. M. ROBESY,

J. S. SPURGEON.

MEMORIALS

DR. I. N. CARR

1856—1923

BY DR. J. S. SPURGEON

The subject of this sketch, Isaac Norfleet Carr, D.D.S., was born in Wilmington, N. C., in 1856. Joined the North Carolina Dental Society during the meeting held in Raleigh, June 1, 1880, and continued an active member of this Society up to within a few years of his death which occurred in 1923.

He was a member of the Southern Branch of the National Dental Association, also for a time a member of the National Dental Association.

When I first knew him he lived in Tarboro, N. C., moved to Durham, N. C., in 1896, at which place he enjoyed a lucrative practice for many years. He always took an active interest in his profession, and contributed many papers of interest.

In a casual review of the proceedings I find that at a meeting in 1881 he read a valuable paper on "Dental Chemistry." In 1882, a paper on "Dental Education."

He was chairman of the Publishing Committee for the years 1898-1901, 1903-1904.

Some of the most important papers read by him was in 1898—"Dental Prophylaxis or Preventive Treatment"; in 1899, "The value

of Suggestion in Relieving Pain in Dental Operations"; in 1902, "Histology"; in 1904, "Some Practical Points Learned by Nearly Thirty Years Actual Practice."

He was very active and zealous in all phases of the dental profession, lending his support to all advances made. He was aggressive and progressive, always ready to try and to adopt the new when it had the appearance of merit.

As a neighbor and friend he was loyal and courteous.

As a professional compeer, he was one of the most agreeable men I have ever known. He was quick to see the good in others and I never heard him speak evil of any man.

"Let charity incline us to throw a veil over his foibles, whatever they may have been, and not withhold from his memory the praise that his virtues may have claimed."

DR. JAMES DEWITT REGAN
1873—1922

BY DR. R. T. ALLEN

Again the North Carolina Dental Society is called upon to record the passing of one of its members and to recount his virtues and professional attainments, to emulate his good qualities and "throw a veil over his foibles, whatever they may have been, and not withhold from his memory the praise that his virtues may have claimed."

Dr. James DeWitt Regan was born in Robeson County, North Carolina, November 8, 1873, was graduated from the Atlanta Dental College and admitted to the practice in this State in 1898 and was actively engaged in the practice at Lumberton until July 28, 1920, when stricken with paralysis of his entire right side while engaged in the discharge of his office duties.

He was not an old man, being stricken down in the prime of life, the meridian of manhood and the noonday of his usefulness to his profession, his family, his community and himself. He answered the final summons August 15, 1922.

Dr. Regan enjoyed the reputation of being an excellent dentist, especially gifted in gold inlay, crown and bridge work.

He was affiliated with the Methodist Church, the Masonic Lodge, the North Carolina Dental Society and the Cape Fear Dental Society, and was a progressive and useful citizen who will be greatly missed.

DR. TYLER ALEXANDER CAMPBELL
1894—1923

BY DR. E. L. SMITH

"God's finger touched him and he slept."

In the words of the Ancients "He whom the gods love dies young." So it was with TYLER ALEXANDER CAMPBELL. Just at that

time when youth begins to blossom into the flower of life and brilliant possibilities begin to merge into a career of success, death, the inevitable, "Death, the Gate of Life" claimed in its transition and innumerable caravan Dr. Tyler Campbell, for

"There is no death! what seems so is transition;
This life of mortal breath,
Is but a suburb of the life Elysian
Whose portal we call death."

Tyler Alexander Campbell, the son of Alexander and Flora McLean Campbell, was born September 17th, 1894, in Aberdeen, North Carolina. His literary education he received at Bingham Military School, after which he entered the Baltimore Dental College and began the training for his life work—dentistry. Later he completed his professional education at the Medical College of Virginia at the age of twenty-one. He stood the examinations of the State Dental Boards of Virginia and North Carolina, passing both with distinction and high honors.

When the clouds of war appeared on the horizon and Tyler Alexander Campbell's native heath was called into the gigantic conflict of the age, he volunteered for military service in 1917 and was soon commissioned a First Lieutenant in the United States army, serving throughout the remainder of the World War.

Following the war he located in Fayetteville, North Carolina, for a short time but feeling the call of his birthplace left Fayetteville and had been successful in establishing an excellent dental practice in Aberdeen.

But:

"There is a reaper whose name is Death,
And with his sickle keen
He reaps the bearded grain at a breath,
And the flowers that grow between."

And, Tyler Campbell, stricken with pneumonia, was called to his final resting place March 31st, 1923, at the age of twenty-eight; verily in the Morning of Life, when the flower of manhood had just begun to bloom.

But even in death there is consolation, for, to succumb to the inevitable end of our physical sojourn and at the same time to leave behind the good of a life well spent and its effects on others is not to die, but rather live forever. Tyler Campbell yet lives in the hearts and minds of his former associates. Such is not death; it is life eternal. Tyler Alexander Campbell was a man that sought the beautiful, and finding the beauty of life, contented himself with passing it to others. His life was gentle, his nature was kind; to know him was to esteem him; what more could be asked of man?

Surely,

“ . . . His life has flowed
 From its mysterious urn a sacred stream,
 In whose calm depth the beautiful and pure
 Alone are mirrored. . . .”

DR. MORTIMER ALBERTO BLAND

1843—1922

BY DR. W. M. ROBEY

Died September 18, 1922, at his home in Charlotte.

Mortimer Alberto Bland was born at Beaufort, S. C., April 13, 1843, making him a little more than 79 years of age at his death. He was the son of Rev. Charles T. and Alethia Sandifer Bland. The Bland family moved from Virginia to South Carolina before the Revolutionary War.

Dr. Bland enlisted in the “Southern Stars” of Lincolnton at the age of 16 years, Gen. Robert Hoke being second lieutenant of the company. The troops were ordered to Virginia and Gen. D. H. Hill was in command when the battle of Bethel Church was fought.

After the expiration of the first enlistment, Dr. Bland re-enlisted and was enrolled in the Palmetto Guards of Charleston under Gen. P. G. T. Beauregard, was in numerous battles around Charleston; was transferred to the artillery, promoted to a captaincy, and was wounded by the explosion of a shell. When Sherman invaded the Carolinas, Dr. Bland’s command was ordered to join Gen. Johnston’s army. He was in the battle of Averysboro, N. C., and was with Gen. Johnston at the surrender.

Dr. Bland was a gallant Confederate soldier and his love for the South was great, but when hostilities were over he was a loyal supporter of the Stars and Strips.

After his return home he took up the study of dentistry, attending the Baltimore College of Dental Surgery and graduated at the University of Tennessee and practiced his profession in Charlotte for more than (40) forty years, retiring from active practice in 1908.

He was one of the organizers of the North Carolina Dental Society in 1875, was President 1881-1882 and was prominent in all Society activities for many years.

Dr. Bland took an active part in the development of Charlotte, one street being named for him. He was a charter member of the Southern Manufacturers Club, and a member of St. Peters Episcopal Church.

His modesty, even temperament and tact, combined with his natural ability, energy and common sense won for him the great host of friends who were numbered by those who knew him.

Surviving are the widow, two sons, Dr. Chas. A. Bland and Mortimer A. Bland, Jr.; three daughters, Mrs. George B. Lockhart, Misses Alethia S. and Margaret Clarkson Bland; and three grandchildren, Miss Terry Bland, Charles A. Bland, Jr., and George B. Lockhart, Jr.; his stepmother, Mrs. Charles T. Bland, and two sisters, Misses Alice and Virginia Bland of Tryon, also are living.

REPORT OF LEGISLATIVE COMMITTEE

The Legislative Committee has no special report to make, other than to say that Mr. Bowie again introduced his "little dental bill" to license one Sharp to practice without license in Ashe County. The bill was passed in the House before we knew of its introduction, but was killed before the Senate Committee by a unanimous vote, but it was done only by the active coöperation of dentists throughout the State who came to our rescue.

E. J. TUCKER,
J. M. FLEMING,
F. L. HUNT, *Chairman.*

REPORT OF THE CLINIC COMMITTEE

The Clinic Committee desires to thank the clinicians both from without and from within the State for their willingness to serve as clinicians, and for their unselfish efforts to make the clinics a success.

And we feel that all will agree that the clinics this year surpass any ever attempted in North Carolina, both in their variety of subjects treated and in the thoroughness of the preparation. Much of the success of the State clinics has come from the active coöperation of the five District Societies of the State and is but a foretaste of what we may expect when the district organizations come to full fruition.

The thanks of a grateful Society is extended to all clinicians.

Respectfully submitted,

H. L. KEITH, *Chairman,*
J. A. McCLUNG,
J. L. GIBSON,
H. N. WALTERS,
P. R. FALLS.

REPORT OF EXHIBIT COMMITTEE

The Exhibit Committee begs to report that with the co-operation of the officers of the Virginia Dental Association and the North Carolina Dental Society, we have been fortunate enough to secure the largest number of manufacturers and dealers exhibits we have ever had—numbering 30 in all. Said exhibits contributing \$840.00 toward the expenses of this meeting.

Respectfully submitted,
R. M. OLIVE, *Chairman.*

REPORT OF ORAL HYGIENE COMMITTEE

The following record is taken from the Dental Department of the North Carolina State Board of Health:

Total number of children treated-----	32,382
Number amalgam fillings-----	39,391
Total number of operations-----	77,490
Amalgam fillings per child-----	\$ 1.21
Total operations per child-----	2.48
Total expenditures-----	29,384.51
Per capita cost to State-----	.91
Per capita cost to parents-----	Nothing
Per capita cost to counties or other agencies-----	Nothing
Total per capita cost-----	.91

J. C. JOHNSON, *Chairman.*
A. P. READE,
E. J. GRIFFIN.

REPORT OF DIRECTOR OF DISTRICTS

The Supervisor of Districts has only to report a general satisfactory functioning of the five (5) districts.

The importance of the part each district should play in the State Society is not fully realized by the dentists of the State, but those dentists who attend the district meetings are realizing it so that we have splendid prospects for full district meetings.

It appears to be advisable to redistrict the State, basing our boundaries on transportation and railroad centers rather than

our present method. This should be seriously considered before making a change, as one or two active districts are preferable to five inactive districts.

If we boost the district societies, we boost dentistry and the State Society.

W. M. ROBEX,
Supervisor of Districts.

REPORT OF MEMBERSHIP COMMITTEE

Mr. President, Ladies and Gentlemen:

We, the members of the Membership Committee wish to make the following report. During the past year we have tried to get in touch with every dentist in our respective districts by letter, word of mouth or both, and we have especially urged those that are not members of our Society to become members, telling them of the great benefit and pleasure they would receive by rubbing shoulders with other fellows that feel down in the mouth occasionally, and we have seen some results of our labor, by some that became members and some have been reinstated.

Respectfully submitted,

A. S. CROMARTIE, *Chairman*,
A. C. BONE,
J. H. HURDLE,
C. C. KEIGER,
E. L. EDWARDS.

MEETING OF THE HOUSE OF DELEGATES

MAY 3D, 9:30 A.M.

The House of Delegates was called to order by the President, Dr. Horton.

Dr. W. M. Robey presented the following resolutions and changes to be made in the By-Laws:

ARTICLE III. BY-LAWS

SECTION 1. Candidates for membership in the North Carolina Dental Society, may be proposed at any regular session of the House of Delegates, application for same being made in writing, accompanied with the initiation fee of ten dollars and signed by two members of his district, this fee to be accepted as the initiation fee and one year's dues from the following January 1st.

SEC. 1-A. The Executive Committee is empowered to accept as members in the North Carolina Dental Society, such applicants as have become members of their District Society, and those who have recently passed the State Board of Examiners, when such applications are accompanied by the proper fees.

SECTION 1. The annual dues of this Society shall be ten dollars, two dollars of which shall be apportioned to the American Dental Association, and shall include the subscription to the *American Dental Journal*; one dollar of the annual dues shall be paid to the Research Division of the American Dental Association.

PAYMENT OF DUES

SEC. 2. The payment of dues to this Society shall be collected, according to the provisions of this Article, sec. 3, and payable in advance by the District Treasurer, in whose district the member practices and to which he must belong, as provided for in Article III, section 2, of the Constitution.

TIME OF PAYMENT—DELINQUENCY

SEC. 3. All dues shall be due and payable on or before January 1, for the current year. Any member whose dues are not paid on or before January 20 for the current year shall not be entitled to receive the *Journal* of the American Dental Association, until such dues are paid, subject to the rules of the *Journal*. Any member in arrears shall be disqualified from voting or from being elected to or holding any office in this Society.

DROPPING FROM THE ROLL

SEC. 4. Any member who shall fail to pay his or her dues for one year shall be dropped from the roll of membership and shall not be re-elected until he or she shall have paid his or her one year's arrears and a regular initiation fee for that year, provided the application is in regular form and is recommended by the Executive Committee.

The above changes were discussed by Drs. F. L. Hunt, R. M. Morrow, H. N. Walters, R. M. Squires, F. A. Macon.

A motion was made to suspend the By-Laws and make the above changes.

The motion was seconded and passed.

A motion was made to suspend the publication of the minutes of the meeting, and have them published in the *Dental Cosmos Magazine*.

Motion was seconded and passed.

A report of the Ethics Committee was read. Dr. F. A. Macon presented the report in the form of the following resolution: "Be it resolved that Article I, section 10 of the By-Laws of the North Carolina Dental Society be amended so that these words in lines 10 and 11 be eliminated, viz.: 'Then the chairman shall serve a copy of them on the accused,' and in lieu thereof, the following words inserted, viz.: 'Said investigation shall be conducted without the knowledge of the accused, or to the prejudice, injury or embarrassment to either the accused or accuser. Should the investigation justify such action, the chairman shall notify the accused by serving him or her with a copy of the charges contained in the bill of complaint.'"

The resolution was tabled and turned over to the new Ethics Committee.

Dr. Squires presented the following applications for reinstatement: F. G. Chamblee, I. H. McKaughan, H. R. Hege.

The applications were voted on and accepted.

The names of Dr. Otto U. King and Dr. William A. Giffen were recommended and elected to honorary membership.

The following resolution from the Dental Hygienist Committee was presented by Dr. W. M. Robey: "That a committee be appointed to submit to the President and Executive Committee Dental Hygienic Law and plan for getting it enacted. This law must not jeopardize our present dental law and must include such restrictions that will prevent the abuse of the services of the Hygienist, both by themselves and by the dentists. The finally approved plan and law to be submitted to a specially selected legislative committee appointed by the President, for proposed enactment."

Dr. J. Martin Fleming discussed the resolution and moved that the resolution be tabled.

Motion seconded by Dr. J. H. Wheeler and passed.

The House of Delegates adjourned for one minute.

The House of Delegates was called to order by the President.

The applications for reinstatement were voted on and passed the second reading, and accepted as new members.

The House of Delegates adjourned.

INSTALLATION OF OFFICERS

Officers of the North Carolina Dental Society:

- DR. R. M. MORROW, Burlington, N. C., President.
 DR. J. A. McCLUNG, Winston-Salem, N. C., President-Elect.
 DR. L. R. GORHAM, Rocky Mount, N. C., Vice-President.
 DR. H. O. LINEBERGER, Raleigh, N. C., Secretary.
 DR. E. G. CLICK, Elkin, N. C., Treasurer.
 DR. WHITFIELD COBB, Winston-Salem, N. C., Essayist.

Committees:

Executive Committee—Dr. J. C. Watkins, Winston-Salem, N. C., Chairman; Dr. S. R. Horton, Raleigh, N. C.; Dr. J. M. Fleming, Raleigh, N. C.

Ethics Committee—Dr. J. S. Betts, Greensboro, N. C., Chairman; Dr. J. R. Edmundson, Wilson, N. C.; Dr. C. M. Wheeler, Greensboro, N. C.

Legislative Committee—Dr. J. M. Fleming, Raleigh, N. C., Chairman; Dr. F. L. Hunt, Asheville, N. C.; Dr. E. J. Tucker, Roxboro, N. C.

Auditing Committee—Dr. D. E. Shacleford, Durham, N. C., Chairman; Dr. J. S. Hoffman, Charlotte, N. C.; Dr. John Swain, Asheville, N. C.

Oral Hygiene Committee—Dr. P. E. Horton, Winston-Salem, N. C., Chairman; Dr. H. V. Murray, Burlington, N. C.; Dr. A. P. Reade, Durham, N. C.

Clinic Committee—Dr. W. F. Bell, Asheville, N. C., Chairman; Dr. P. C. Hull, Charlotte, N. C.; Dr. I. H. Davis, Oxford, N. C.; Dr. J. R. Meador, Reidsville, N. C.; Dr. J. J. Battle, Rocky Mount, N. C.

Program Committee—Dr. R. M. Squires, Wake Forest, N. C., Chairman; Dr. P. L. Pearson, Raleigh, N. C.; Dr. Wilbert Jackson, Clinton, N. C.

Exhibit Committee—Dr. S. P. Norris, Raleigh, N. C., Chairman; Dr. H. L. Keith, Wilmington, N. C.; Dr. D. F. Keel, Greensboro, N. C.

Clinic Board of Censors—Dr. J. H. Judd, Fayetteville, N. C., Chairman; Dr. N. T. Holland, Smithfield, N. C.; Dr. W. C. Houston, Concord, N. C.

Dental Hygiene Committee—Dr. A. H. Fleming, Louisburg, N. C., Chairman; Dr. J. A. Sinclair, Asheville, N. C.; Dr. S. J. Finch, Oxford, N. C.; Dr. L. J. Dupree, Kinston, N. C.

Dental College Committee—Dr. W. M. Robey, Charlotte, N. C., Chairman; Dr. E. J. Tucker, Roxboro, N. C.; Dr. J. M. Fleming, Raleigh, N. C.

Entertainment Committee—Dr. N. G. Carroll, Raleigh, N. C., Chairman; Dr. R. M. Olive, Fayetteville, N. C.; Dr. W. T. Smith, Wilmington, N. C.; Dr. J. L. Gibson, Laurinburg, N. C.

Necrology Committee—Dr. J. H. Hurdle, Mebane, N. C., Chairman; Dr. R. L. Reynolds, Lexington, N. C.

Liability Insurance Committee—Dr. J. H. Wheeler, Greensboro, N. C., Chairman; Dr. H. O. Lineberger, Raleigh, N. C.; Dr. R. T. Gallagher, Washington, N. C.

State Hospital Committee—Dr. J. S. Spurgeon, Hillsboro, N. C., Chairman; Dr. J. C. Johnson, Raleigh, N. C.; Dr. A. M. Schultz, Greenville, N. C.

Mid-Winter Clinic in Richmond, Committee—Dr. S. Robert Horton, Raleigh, N. C., Chairman; Dr. J. N. Johnson, Goldsboro, N. C.; Dr. I. R. Self, Jr., Lincolnton, N. C.

Director of Districts—Dr. J. A. McClung, Winston-Salem, N. C.
There being no further business the Society adjourned.

WEDNESDAY AFTERNOON

2 P.M.

GENERAL CLINICS

(In the Music Room and Parlor)

1. "Fundamentals of Denture Service," Dr. William A. Giffen, Detroit, Mich. (Invited Guest.)
2. "Present Trend of Crown and Bridge Work, with Special Attention to Conservation of Pulp," Dr. Loren D. Sayre, Chicago, Ill. (Invited Guest.)
3. "Technique on a Few Original and Practical Points in Dentistry," Dr. Chas. L. Alexander, Charlotte, N. C.
4. "Special Anchorage of Inlays in the Anterior Teeth," Dr. G. C. Barnard, Kannapolis, N. C.
5. "Points of Interest in Exodontia," Dr. Harry Bear, Richmond, Va.
6. "Alloy Base Crowns," Dr. H. S. Beeks, Richmond, Va.
7. "The Orton Crown," Dr. L. G. Coble, Greensboro, N. C.
8. "Classifications and Technic of Removing Impacted and Un-erupted Lower Third Molars," Dr. A. W. Craver, Henderson, N. C.
9. "Paterson Method of Impression Taking and Boxing In," Dr. Whit R. Dodd, Richmond, Va.
10. "Laboratory Construction of Porcelain Jacket Crowns," Dr. J. L. Gibson, Laurinburg, N. C.
11. "Exhibit of Plaster Casts and Roentgenograms of Mouth Surgery Cases." (Illustrative of Cases reported under "Primary Closure of Mouth Wounds"), Dr. Guy R. Harrison, Richmond, Va.
12. "Selection, Grinding and Regrinding of Teeth for Full Dentures," Dr. L. J. Hooper, Asheville, N. C.
13. "Cast Gold Restorations," Dr. A. O. James, Chatham, Va.
14. "Cast Porcelain Inlays," Dr. R. H. Jefferies, Richmond, Va.

15. "Direct Method of Making Three Types of Abutments for Vital Teeth," Dr. J. E. John, Roanoke, Va.
16. "Plaster Mask of Adult Tubercular Mouth Breather, Showing Results of Operation, Restoring Nasal Breathing," Dr. J. N. Johnson, Goldsboro, N. C.
17. "Bridge Work, Using Three-Quarter Crown Attachments," Dr. C. C. Keiger, Charlotte, N. C.
18. "Orthodontia," Dr. E. N. Lawrence, Raleigh, N. C.
19. "Removable Bridge Work by the Roach Method," Dr. J. B. Lester, Richmond, Va.
20. "Aesthetic Abutment Pieces," Dr. Clyde E. Minges, Rocky Mount, N. C.
21. "Bridge Work," Dr. F. W. McCluer, Lexington, Va.
22. "Dr. Neil's Technique in the Construction of Lower Dentures," Dr. W. L. McRae, Red Springs, N. C.
23. "An Inconspicuous Orthodontic Appliance," Dr. N. F. Muir, Roanoke, Va.
24. "The No-Plaster Method of Inlay Casting," Dr. R. M. Olive, Fayetteville, N. C.
25. "Orthodontia," Dr. W. H. Pearson, Norfolk, Va.
26. "Reading Dental Radiograms," Dr. W. M. Robey, Charlotte, N. C.
27. "Taking and Grinding Bite by the Hall-Paterson Method," Dr. T. H. Scales, Richmond, Va.
28. "Amalgam Restorations," Dr. H. F. Sommardahl, Roanoke, Va.

WEDNESDAY EVENING

6:30 P.M.

Banquet—Main Dining Room, Carolina Hotel.
 Special Entertainment and Dancing in Ball Room.

